The Transportation Sector in Alberta: Present Position and Future Outlook

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The Transportation Sector in Alberta: Present Position and Future Outlook

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Alberta Economic Development Authority

Report Prepared by:

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Executive Summary

The importance of transportation to the overall prosperity of a society has long been recognized. At the same time, however, it often suffers from "obvious obscurity" – there is a tendency to take for granted the critical role and importance of this sector. The focus of this study is on the transportation system in Alberta and, in particular, on the elements of this system associated with freight or goods movements.

An increasingly globalized world is changing our economy. Alberta's economic strength and overall prosperity is increasingly reliant on our ability to compete on the world stage. Whether as a source of a diversified range of value-added goods and services or as a low cost shipper of commodities, our participation in these and other economic activities in the international arena is vital.

Remaining competitive in international markets is key to maintaining and enhancing Alberta's living standards. Much of Alberta's Gross Domestic Product (GDP) is dependent on international exports and the province is increasingly competing with other countries as well as other provinces.

In addition to supporting tourism, providing access to export markets, and being the circulatory system of economic exchange, transportation is the one system that virtually all Albertan's utilize and depend on daily.

It is with this consideration in mind that this report presents an examination of the current status and future prospects of this vital sector, with an emphasis on goods movement in our province. Of prime consideration is the role of transportation as the province moves towards an economy in which value-added sectors are growing in importance. The analysis is based on stakeholder interviews and workshops – Alberta businesses speaking out – as well as econometric analysis and a review of research in a range of fields.

The two main objectives of this study are as follows:

1. Identify the role and demonstrate the importance of the transportation and logistics sector to the Alberta economy through key economic indicators.

2. Undertake an analysis of the impact of future trends and developments in the transportation sector and provide a clear understanding of what is needed from government and the private sector in terms of infrastructure, carrier services and regulatory changes to meet the future demands of a growing value-added Alberta economy over the next decade.

Key Findings:

On the importance of Transportation to Alberta's Economy…

- Trucking, Rail, and Air move over half of our $55 Billion worth of international exports to market (2002)
- Transportation and Warehousing is the 5th largest sector in Alberta's economy, with a 2001 GDP of $6.4 Billion dollars
- It employs directly over 95,000 employees, who collectively earn over $3 Billion in salaries annually
- In the 1996-2001 period, this sector's GDP increased over 20%, employment increased 45% and similar increases were realized in the value and volume of goods carried – figures well above the Canadian averages for this sector
- As an example of this sector's importance, Calgary's Transportation and Logistics sector is on the verge of displacing Oil and Gas as the city's top employment sector[1]
- Official statistics do not accurately capture the total spectrum of transportation activity and its importance to our economy - up to 50% underestimation related to private trucking or in-house services for example

On Future Growth in Value-added….

- Our economic forecasting to 2010 (percent change from 2000 base in brackets) identifies manufacturing (40%), construction (54%) and accommodation and food services (32%) among the top growth sectors
- Within the manufacturing sub-sectors, chemicals (87%), fabricated and primary metals (77%), and food (25%) make up half of total manufacturing output
- The highest forecasted growth in Alberta is predicted for the computers and electronics sector, at 205%
- Related to manufacturing, the predicted growth in transportation output (tonnes) is highest for trucking and air, followed by rail

On Transportation requirements to meet Growth in Value-added…

- Infrastructure needs in the major urban centres, which are the focal points for value-added activity and goods distribution, ***is*** a top priority – ring road developments are welcome but may not be a complete solution to congestion related issues
- Ensuring our trade corridors, regional linkages and ports have the capacity and characteristics to not only support but promote economic activity
- Funding for infrastructure needs to be increased, stabilized and alternative financing options explored – such as public, private partnerships (P3's)
- Alberta needs to continue to lead in adopting policies and regulations that foster our competitive edge – the use of long-combination trucks for example

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[1] Potyondi, B. (2003) The Logic in Logistics, Business in Calgary, April 2003, pp.14-19

- The move toward intermodalism and containerization is changing the face of transportation and is essential to a value-added future
- Labour shortages are a current issue that is projected to become even more of a challenge – transportation needs qualified and skilled labour to meet forecasted growth and maintain our competitive advantage

Summary and Action Items

The following general action item is reflective of the viewpoint of many stakeholders and often was voiced in conjunction with a range of issues.

Action Item:

- Stakeholders in transportation, whether industry, government or academia, work collectively and consistently to raise the profile of transportation.

As a follow up action item, it was argued by stakeholders and became obvious through research activity, that improved accuracy of statistical information is also critical – supporting a better understanding of transportation and, as a consequence, contributing to more effective decision-making.

Action Item:

- The Alberta Government increase its efforts to work with industry, other levels of government, and other governments in ensuring that more accurate and timely data reflecting the true contribution of the transportation sector is collected on an ongoing basis and is used to enhance our understanding of the transportation system and its needs.

In meetings and discussions with multiple stakeholders, the observation was made that consultation with the citizens of Alberta continues to grow in importance, particularly as the economy develops towards value-added. The issue of infrastructure funding for both renewal and new development was raised constantly. Differing priorities for infrastructure funding were expressed. It was recognized that funding for infrastructure in Alberta is not infinite and that priorities expressed by stakeholders are not consistently agreed to. This leads to the suggestion that ongoing input into provincial infrastructure funding by all stakeholders is important.

Action Item:

- In determining future funding allocations for Alberta's transportation infrastructure, Alberta Transportation will hold regular annual meetings jointly with transportation stakeholders from all modes and municipalities. At this meeting, transportation stakeholders will have an opportunity to identify strategic opportunities, their infrastructure needs, funding proposals, and provide comments to Alberta Transportation. The Government, on the basis of these discussions and their own internal review, will then determine the allocation of funds for transportation infrastructure investment.

Infrastructure

Road Infrastructure

Alberta's future value-added economy and its mobile society will be even more dependent on an efficient and safe road system. There are concerns about the long term health of our highway system and the level of congestion in our major cities. As value-added sectors expand, the demands on the road system are going to increase and current pressure points will become even more of an issue.

Action Item:

- Alberta Transportation work with the municipalities, regional economic development agencies and industry representatives in expanding its joint monitoring and planning programs, including the setting of investment and road rehabilitation priorities. Focus should be on key roads connecting Alberta's economic regions and facilitating access to export markets.

A major challenge relates to the need for increased and more stable funding for our infrastructure. Obviously, a stronger commitment from federal fuel tax funds would be welcome, but all jurisdictions and stakeholders need to work together to resolve this funding issue.

Action Items:

- The Alberta Government continue to support and develop stabilized infrastructure funding and take the lead with other provinces in developing a joint proposal among First Ministers for a more equitable allocation of federal fuel taxes to the provinces.
- The transportation industry support the vigorous pursuit of new and innovative financing mechanisms including P3 partnerships, provincially-backed bond issues with attractive tax incentives to investors, and royalty credit mechanisms to resource companies in exchange for their direct funding of highway links to their projects.

Rail and Intermodal

Over the next ten years in Alberta, value-added and lower value resource shippers will continue to rely on rail to reduce market access costs with both bulk heavy haul and intermodal container transport.

West coast port capacity should be as much a concern for Alberta's rail access to export markets as it is for British Columbia. According to B.C. port authorities and terminal operators, trans-Pacific container growth through Vancouver is surging and may exceed capacity within 10 years. Limited expansion options at Port Vancouver and Fraser Port may warrant supplementary addition of container facilities at Prince Rupert. At the same time efficient port access for bulk and break bulk marine trades must be retained.

Action Item:

- The Governments of Alberta and British Columbia jointly work with port authorities, terminal operators, railways and shippers to project the best combination of bulk, break bulk and container facility investments, and how best to finance them.

Air

Although the Province still has a small pool of capital funding available for non-scheduled airports, it has largely withdrawn from airport investment. While some of these airports serve in a medi-vac or firefighting role, many attract very little activity in relation to their overall cost of operation and maintenance.

A recent study sponsored by the Alberta Aviation Strategy Action Group has identified a requirement for an investment of $97 million to further rehabilitate the province's smaller airports over the next ten years. In addition, the ten provinces participated in a national small airport viability study that concluded that 50 percent of Canada's smaller airports will require external support in order to remain viable.

Action Item:

- The Alberta Government work in conjunction with the federal government, municipalities and other aviation stakeholders, to develop a strategic plan on the future of the province's smaller non-scheduled airports.

The Calgary and Edmonton airports have both identified efficient ground access as being vital to their ongoing growth and development and to facilitate intermodal movements, both locally and regionally.

Action Item

- Completion of ring-roads at Calgary and Edmonton should be given a more immediate priority as a means of facilitating truck, bus, and automobile movements that are important to Alberta's airports and will be increasingly vital to Alberta's growing value-added economy.

Government Regulations and Policy

Motor Carrier and Bus Issues

A major challenge facing the motor carrier sector is, despite NAFTA, many regulations facing the industry are still inconsistent between jurisdictions. The industry not only seeks harmonization on vehicle weights and dimensions, for example, but would like to see enforcement applied uniformly. Furthermore, there is an opportunity to enhance Alberta's locational advantage by expanding the use of long-combination vehicles (LCV's) and working with other jurisdictions to encourage their adoption elsewhere. This has important implications for a value-added future where efficient use of equipment and driver resources will be even more important.

Action Item:

- In conjunction with joint planning of future highway capital and preservation investment priorities, broaden the network of highway links permitting LCV traffic.

The industry recommends Alberta Government officials continue to work closely with US and Canadian Customs policy makers to:

- Separate truck and passenger vehicles
- Provide fast lanes for trucks at border crossings and appoint specially trained officers
- Employ ITS and new information processing technology such as Radio Frequency Interface (RFI) to load truck computers with customs clearance data that would be recognized by customs officers at the border crossing.

Action Item:

- Step up joint industry/customs/immigration planning towards eliminating unreasonable border congestion utilizing the potential of ITS (Intelligent Transportation Systems) and RFI (Radio Frequency Interface), to pass information to border points prior to arrival.

Rail and Intermodal Issues

According to the Railway Association of Canada, much of Northern Alberta is now served by shortline operations which require intermodal facility investment as well as track rehabilitation and bridge upgrades to accommodate the new transcontinental standard of 286,000 pounds weight-on-rail for more economical, heavy loading railcars. Transportation stakeholders in Northern Alberta have indicated that without this investment, the market competitiveness of Northern Alberta shippers is constrained as they must load railcars lighter or incur higher cost trucking to reach rail reload facilities or intermodal terminals on the transcontinental mainlines.

The Railway Association of Canada is proposing public private partnerships in which railways and governments share funding for strategic regional railway infrastructure investment. Reflecting vastly differing ownership, cost and competitive models, current provincial policy does not support public participation in private railway infrastructure funding.

Action Item:

- All levels of government work together to investigate the feasibility of the proposals put forward by the Railway Association of Canada regarding infrastructure investment for shortline railways.

Air Issues

The liberalization of Canada's air service agreements is fundamental to the ongoing growth and development of Alberta's value-added economy. Present agreements contain provisions that hamper the ability of passenger and cargo carriers to introduce capacity and operate in a way that will adequately respond to the needs of the Alberta market.

Action Items:

- The Alberta Government should seek official observer status at air treaty negotiations between Canada and other countries.
- Alberta should advocate for truly liberal air service agreements that include such provisions as fifth freedom rights and all-cargo co-terminalization.
- Alberta should advocate for inclusion of Canada in a proposed multi-lateral, transatlantic open skies agreement with the European Union.
- International all-cargo services should be addressed separately in air service agreements.

Various fees and charges are imposed on Alberta's aviation users that affect the ability of our airports to compete with airports elsewhere including those in the United States and, in turn, effectively serve the province's growing value-added economy.

Action Items:

- Take immediate action to eliminate the remaining Alberta Government tax on aviation fuel.
- Alleviate the burden of any unreasonable taxes, fees and charges that impose a cost on passengers and shippers and inhibit the ability of Alberta airports to compete effectively in attracting traffic.

When Alberta's two major airports were transferred from federal to local control they were required to make annual rent payments to the federal government. At present, Calgary International and Edmonton International pay about $24 million and $3.0 million, respectively, and by 2006 the amount will double at Calgary and increase five-fold at Edmonton if current rent formulas are not re-negotiated on more reasonable terms. Furthermore, the federal government does not contribute to the upkeep and improvement of these airports in return for the rent it receives.

Action Item:

- Advocate for re-negotiation of federal airport rent formulas on more reasonable terms or, failing that, the outright transfer of airport ownership to Alberta's local airport authorities as they become viable.

The tourism sector is made up of a number of important players and the gateway role played by Alberta airports, particularly at Edmonton and Calgary, is critical to the overall success of the industry. Although the Alberta Government already partners with industry and the communities in tourism promotion, it is important that an appropriate share of promotional funding be directed to partnerships with the airports.

Action Item:

- The Alberta Government work with the province's airports in developing partnerships and allocating funding for the promotion of Alberta's tourism development.

Industry Operations

Motor Carrier Issues and Opportunities

By 2013, the Alberta Motor Transport Association (AMTA) is forecasting $7 billion worth of traffic between Alberta and the U.S., which is double the current level. Carriers are looking to larger equipment combinations, and new technologies to enhance productivity. Intelligent transportation systems and advanced vehicle communications are being adopted by more firms seeking an edge.

The financial viability of smaller carriers in particular is challenged by higher wages for drivers and rising costs for fuel, insurance and other inputs. The development of "reciprocal insurance coverage," an AMTA-sponsored program to address the self-insured component of a carrier's coverage, is welcome.

Action Items:

- The AMTA should open a dialogue with the Alberta Government as a means of supporting the AMTA self-insurance initiative for small truck and bus companies.
- The AMTA and the trucking industry will support the province in the implementation and enforcement of a 100 km/hr speed limit for heavy commercial trucks. The province should support this initiative as a means of mitigating the insurance premium issue.

Bus Issues and Opportunities

An important operational challenge for the bus sector is to enhance their image and their attractiveness as a passenger alternative. Markets that could be developed include passenger feeder systems to major airports.

Action Item:

- The bus industry, using all available means, should intensify its campaign to achieve a more prominent position in a national passenger transportation strategy. The initiative should enunciate a better balance in passenger subsidy programs, particularly for poorly-served rural areas; enhanced competition through relaxed and evenly administered regulatory practices; and programs to create greater public awareness of the advantages of motor coach travel.

Warehousing and Logistics

Warehousing and logistics is a rapidly growing sector in Alberta, largely owing to a positive business environment and the province's central geographic location. However, future growth in this sector could be seriously impaired by a shortage of suitably skilled workers and increasingly congested road networks in and around our major urban centres.

Action Item:

- A high priority be assigned to the completion of ring-roads around Calgary and Edmonton as a means of facilitating truck movements to, from and within Alberta's major urban centres. (note: action item also mentioned under air infrastructure issues, page viii)

- A high priority be assigned to the development and maintenance of internal road systems for accessing industrial areas in major urban centres that are commensurate with the needs of a growing warehousing and logistics sector.
- Alberta's secondary and post-secondary teaching institutions be encouraged to develop and expand programs for graduating students with the kind of skills required by Alberta's growing warehousing and logistics sector.

Rail Issues and Opportunities

Rail/intermodal transportation in Alberta is in transition to accommodate a value-added economy that still retains a very substantial natural resources sector. The rail/intermodal outlook over the next ten years will focus on international market access - for emerging higher value exports as well as conventional lower value exports.

This ten year outlook is reflected in current Alberta rail traffic trends confirming a shift in transportation demand characteristics. Coal and grain, the market mainstays of bulk trainload transportation, are being displaced by a myriad of emerging intermodal container traffic opportunities.

Intermodal container transport is the value-added favourite for the future and low backhaul container rates are also attracting Alberta resource exports. However, bulk rail and ship transport will always move the greatest volume at the lowest cost. So, an adjustment period is anticipated while the market seeks a balance:

- in export versus import container freight flows and rates
- in high versus low value/container versus bulk transport.

Action Item:

- The railways reconsider extending lower cost rail-based container service beyond consolidated intermodal hub terminals at Calgary and Edmonton to help maximize the opportunity to access export containers from rural Alberta.

Air Issues

Owing to its strategic position on the great circle routes, Alberta has the potential to develop as an international distribution platform for cargo destined for points throughout North America. Cargolux already provides freighter service between Calgary and Europe and an opportunity has been identified by the Calgary Airport Authority for service between Alberta and Asia.

Action Item:

- The Alberta Government and the two major airports should cooperate to develop Alberta as a competitive cargo destination and as a transshipment platform for cargo moving between multiple overseas points and markets throughout North America.

Human Resources

The magnitude of the labour problem facing transportation is easy to underestimate, but the facts are sobering. The transportation workforce is aging rapidly and retirements will surge as the "baby boom" generation begins to depart the labour force. In this study, trucking, bus, and warehousing and logistics were the sectors most vocal about their human resources challenges. The issues are complex and include everything from public relations and public perceptions to educational programs and training.

A key component in addressing this human resources challenge is education and training.
In many cases, there are traditional avenues for persons wishing to enter the transportation work force. However, just as transportation has undergone a transformation to a modern, technology and information intensive sector, the education sector needs to transform its transportation offerings in step.

Action Items:

- The Government of Alberta, with the support and advice of industry, expand its support of the development of the Joint Learning Initiative throughout secondary schools in this province.
- Funding for courses in transportation by Alberta Learning should be re-established and applicable to the fall 2004 semester.
- Alberta Learning, in conjunction with Alberta Municipal Affairs, local communities and industry where applicable, develop a needs assessment for Transportation / Logistics Training in Alberta's rural communities to facilitate the development of such skill training courses.
- The Government of Alberta support a Centre of Excellence in Transportation and related public policy research in Alberta, such as the Van Horne Institute, using the ASRA model for funding.

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List of Acronyms

AEDA	Alberta Economic Development Authority
AMTA	Alberta Motor Transport Association
ANR	Athabasca Northern Railway
ARHCA	Alberta Roadbuilders and Heavy Construction Association
ARN	Alberta Rail Net
ASRA	Alberta Science and Research Authority
BBE	Braden Burry Expediting Services Ltd.
BC	British Columbia
BCR	British Columbia Railway
BNSF	Burlington Northern Santa Fe
BSE	Bovine Spongiform Encephalopathy
BTS	Bureau of Transportation Statistics
CANAMEX	Canada, America, and Mexico Trade Corridor
CANSIM	Canadian Socio-Economic Statistics
CAR	Canadian Aviation Regulations
CEA	Consulting Engineers of Alberta
CN	Canadian National
CPR	Canadian Pacific Railway
CTHRC	Canadian Trucking Human Resource Council
CWR	Central Western Railway
EPA	Environmental Protection Agency
EU	European Union
FAST	Free and Secure Trade
G-7	Group of 7
GDP	Gross Domestic Product
GMO	Genetically Modified Organisms
GST	Goods & Services Tax
GVW	Gross Vehicle Weight
HRDC	Human Resources Development Canada
IAT	International Air Terminals
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	Intelligent Transportation Systems
JIT	Just In Time
JLI	Joint Learning Initiative
Kph	Kilometres per hour
LCV's	Long Combination Vehicles
LWR	Lakeland and Waterways Railway
MCC	Motor Coach Canada, Inc.
MKNR	Mackenzie Northern Railway
NAFTA	North American Free Trade Agreement
NAIT	Northern Alberta Institute of Technology

Nox	Nitrous Oxide
NWT	North West Territories
ON	Ontario
P3's	Public-Private Partnership's
PARS	PreArrival Reporting System
R&D	Research & Development
RFI	Radio Frequency Interface
SAIT	Southern Alberta Institute of Technology
SARS	Severe Acute Respiratory Syndrome
SCCORI	Supply Chain Collaboration Online Research Institute
SCM	Supply Chain Management
TAC	Transportation Association of Canada
TCH or TCH No. 1	Trans Canada Highway (Number 1)
TD	Toronto Dominion Bank
TEA21	Transportation Equity Act for the 21st Century
TEUs	Twenty foot Equivalent Container Units
TRIP	Transportation Infrastructure Program
TTDA	Transportation Training and Development Association
UPRR	Union Pacific Rail Road

Chapter

1

1 Introduction

The importance of transportation to the overall prosperity of a society has long been recognized. At the same time, however, it often suffers from "obvious obscurity" – there is a tendency to take for granted the critical role and importance of this sector. The focus of this study is on the transportation system in Alberta, in particular, on the elements of this system associated with freight or goods movements.

1.1 Study Context

An increasingly globalized world is changing our economy. Alberta's economic strength and overall prosperity is increasingly reliant on our ability to compete on the world stage. Whether as a source of a diversified range of value-added goods and services or as a low cost shipper of commodities, our participation in these and other economic activities in the international arena is vital.

Remaining competitive in international markets is key to maintaining and enhancing Alberta's living standards. Much of Alberta's Gross Domestic Product (GDP) is dependent on international exports and the province is increasingly competing with other countries as well as other provinces.

Export trade is particularly vital to our economy. Today, more than 2,000 Alberta businesses export goods and services around the world. More than 35% of our economic activity, or $55 billion in 2002, can be traced to Alberta exports [1].

While resource-based commodities such as natural gas, oil, coal, wheat, cattle, and lumber are vital to the economy, value-added manufactured goods and services are playing an increasingly important role in developing Alberta's economy and creating new opportunities for Alberta business. For example, the share of manufactured goods in Alberta's total exports of goods increased from 24% ($4.7 billion) in 1992 to 28% ($15.5 billion) in 2002[2].

The transportation sector, which includes transportation logistics, plays a significant role both in providing direct benefits to the Alberta economy and in supporting the province's export activities. On average, transportation costs make up 16% of the final selling price of all goods and services sold in Canada. In some industries, transportation costs can exceed 50% of the final selling price.

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[1] Source: Alberta Economic Development Figures

[2] Ibid footnote 1

1.2 Study Objectives

The two main objectives of this study are as follows:

> Identify the role and demonstrate the importance of the transportation and logistics sector to the Alberta economy through key economic indicators such as employment, salaries and wages, share of gross domestic product, etc.
>
> Undertake an analysis of the impact of future trends and developments in the transportation sector and provide a clear understanding of what is needed from government and the private sector in terms of infrastructure, carrier services and regulatory changes to meet the future demands of a growing value-added Alberta economy over the next decade.

1.3 Study Approach

In order to address these objectives, the approach involved three main components. First, a series of workshops were organized and held in various locations in the Province in order to allow industry and sector stakeholders to discuss their viewpoints. These workshops were followed up with over 60 one-on-one interviews with key stakeholders. Second, a rigorous econometric analysis was carried out involving sector forecasts, and how forecasted changes in various sectors translate into changing demands in transportation. This component is the quantitative balance to the more qualitative assessment associated with the workshops and interviews. Finally, wherever possible, industry and academic research and reports were reviewed in order to provide supporting evidence.

1.4 Report Structure

The report is divided into 7 main chapters. Chapter 2 sets the stage by describing the role of the transportation sector in Alberta's economy in terms of modal activity and economic impact and relevance. The results of the extensive econometric forecasting and analysis are contained in Chapter 3. Chapters 4, 5, and 6 (Road, Rail and Air respectively) present a synthesis of the current issues and future challenges, largely identified through the various stakeholder contributions. The structure of each chapter is modal, and within each, discussion of infrastructure, government regulations and policy, carrier operations, and human resources are presented where warranted. The internal structure is driven by the questionnaire, (Appendix A), which was in turn driven by the terms of reference provided for this study. The discussion emphasizes future prospects for all aspects of transportation in an economy with an increasing value-added orientation. Chapter 7 presents an overview and analysis of Human Resources and the transportation sector with a particular focus on Alberta's educational system.

Chapter

2

2 Goods Transportation In Alberta

The Role and Importance of Transportation for Alberta's Economy and Society.

2.1 Transportation and Society

It is safe to say that the vast majority of Albertans rely daily on the transportation system in all its forms. Whether traveling to work, shopping, or socializing, either on foot, by bus, by car or by plane, transportation is the one sector Albertans use daily. It is perhaps because of this essential role, that transportation often does not figure prominently in public and other agendas. It is such a basic need, that it is often taken for granted.

The Honourable J.W. Pickersgill, former Minister of Transport and head of the Canadian Transport Commission, expressed the view that transportation, as a major driver in the economy, was not given the appropriate attention by government, by the public and by educators. Pickersgill stated that:

> *"For a country that depends more than any other in the world on transport, we devote less time and money to the economics of transportation".*[3]

His comment suggests that not only on an individual level, but from a broader perspective, transportation remains underappreciated and subsequently, often poorly understood. As the first action item of this report, it is appropriate that this situation be the focus of attention.

Action Item:

- Stakeholders in transportation, whether industry, government or academia, work collectively and consistently to raise the profile of transportation

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[3] Cited by Dr. Barry Prentice, Director of the Transport Institute, University of Manitoba

In general, Alberta has one of the most enviable transportation systems in Canada, and is relatively well served by the major modes. We are a prosperous province, reflected in high levels of car ownership and use. Clearly, however, our major centres, Calgary and Edmonton, are becoming victims of their own success, and congestion issues are high on local agendas. Recent funding announcements regarding the completion of much needed ring-roads in each centre are welcome for many citizens and businesses.

The trucks that move goods operate on a system dominated by passenger cars. The same can be said for air where the majority of flights are related to people movement. Rail, with some exceptions, is largely a freight oriented mode. Although trucking may be a relatively small portion of system vehicles on roads, the movement of goods is critical to our economy and therefore our overall well-being as a province. It is the circulatory system for our economy – responsible for not only moving goods for industries, but supplying the consumer goods on which we depend.

2.2 Transportation and the Economy

Introduction

For too long, little attention has been paid to the importance of transportation as a driver of the Alberta and the Canadian economies. Transportation is often thought of in personal terms, often because of the correlation between transportation and our personal needs for travel to and from work, school and other family-related activities. Transportation is much more important then it seems at first glance, a fact reflected in the following quote.

> *"Transportation is omnipresent in Canadians' lives. Transportation opens markets to natural resources, agricultural products and manufactured goods, it supports service industries, and it alleviates the challenges delimited by topography. Transportation also links communities and reduces the effects of distances separating people from each other. As simple as these implied and oversimplified roles of transportation are, the intertwined and interdependent relationships between transportation and the economic and social fabrics of our society are complex – this is because these roles are diverse and comprise many separate evolving circumstances and conditions delimiting needs".*[4]

Growth in the economy and quality of life are very dependent upon Alberta's ability to develop well-paying jobs in order to fulfill the potential for our economic future. Exports to other countries are increasingly becoming a higher percentage of overall economic output indicating a deeper and deeper involvement by Alberta in the continental and global economies. The relatively small size of its domestic market means Alberta must increase exports in to order to continue growth in the economy and improve overall standard of living.

Several expected projects in the Yukon, Northwest Territories and northern Alberta could have significant incremental impacts on the province's economy over the next decade.

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[4] Transport Canada – Transportation in Canada 2002 Annual Report, Page 1

These include:

1. Continued expansion of existing and possible new oil sands projects;
2. Ongoing oil and gas exploration and development;
3. Mining projects;
4. The Mackenzie Valley pipeline and;
5. The possibility of a crude oil pipeline from the Fort McMurray area to Prince Rupert or Kitimat.

The $5 billion, 1300km Mackenzie Valley gas pipeline from the Mackenzie Delta to northern Alberta, to be built by 2010, will have very large direct and indirect economic impacts on the economy. Concomitant with these projects will be the need for expanded road, air and possibly rail transportation services and facilities in Alberta.

The Edmonton Chamber of Commerce has established a Transportation Sub Committee of the Northern Strategy Task Force to address transportation related issues resulting from northern development projects.

By the Numbers

The transportation sector in Alberta is impressive on a number of fronts. It is a diverse sector home to thousand's of firms, from single, independent truckers, to major North American companies like Canadian Pacific Railway, Trimac, and WestJet to name a few.

- The Alberta transportation system directly generates $750 million each year in vehicle registration fees, operators' licenses, and provincial fuel taxes
- Alberta's two International Airports handled over 12 million passengers in 2002
- Alberta's highways support freight movements traveling millions of collective kilometers a day – in the city of Edmonton alone, 3.16 million vehicle kilometers a day[5]!
- The rail system moves more than half of non-pipeline exports to vital North American and offshore markets
- Firms like Canadian Tire, Sears, WalMart and many more have chosen to locate major distribution and logistics facilities in our two major cities

These facts provide a quick impression of the scope and activity related to transportation. More traditional economic facts provide further details. In 2001, Transportation and Warehousing's contribution to Alberta's GDP was over $6.4 billion – 5.3% of total provincial GDP[6]. This places the sector 5th in importance behind oil and gas, finance, insurance and real estate, and manufacturing but ahead of retail and wholesale trade, education, and health services.

The 2002 figures indicate an Alberta Transportation and Warehousing workforce of approximately 96,000 workers or 5.9% of the provincial labour force. An estimate of their salary earnings would be $3.6 billion dollars annually[7], representing a significant economic contribution within Alberta's economy. Proportionately, the size of this sector is a full percent above the Canada wide figure of 4.9%, indicating a larger role for transportation in Alberta's economy compared to other jurisdictions.

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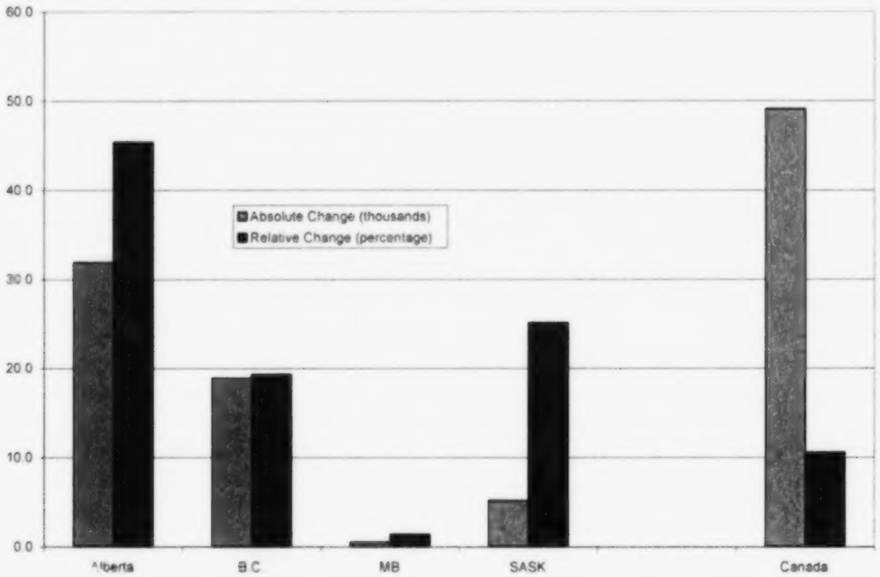
[5] Alberta Transportation (2003) Edmonton Region Commodity Flow Study: note, this figure includes both goods and service vehicle movements

[6] Source: Alberta Economic Development

This is confirmed in Figure 2.1, which illustrates in absolute and relative terms, the change in transportation employment during the period 1990-2002. In absolute terms, Alberta's net gain of 32,000 employees clearly leads Western Canada by a wide margin, and the relative growth (within the transportation sector) at 45%, is well above the Canadian average of 10.6%[8]. Alberta was responsible for 65% of the employment growth in the transportation sector in Canada between 1992-2002. The growth during this time period is not surprising given the overall growth in Alberta's population and economy. Other sectors of the Alberta economy also exhibited impressive employment gains during this period.

Transportation Employment Change 1990-2002



Source: Figure derived from Roach, R. (2003) State of the West, 2003, Canada West Foundation Publication Series

The increasing importance of logistics and warehousing, particularly in the Calgary region is also evident in recent employment figures[9]. In Calgary, employment in this sector has jumped over 40% between 1996 and 2001 – going from 25,000 to 35,000 employees. In fact, the transportation and logistics sector in Calgary is now rivaling the petroleum industry in terms of being the number one employment sector[10]. In Edmonton, growth during this same period has been strong, at 24%, increasing from 22,000 to 27,000 employees[11].

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[7] Based on a 2000 average weekly salary of 740 dollars as reported by Statistics Canada, Labour Force Survey

[8] Source: Roach, R. (2003) State of the West, 2003, Canada West Foundation Publication Series

[9] Source: Statistics Canada (2003), Labour Force Statistics, CMA Level, http://www.statcan.ca/english/Pgdb/labor47c.htm, accessed August, 2003

Behind the Numbers

There are a number of very important points to appreciate when discussing transportation in the context of Alberta's economy:

- Transportation is a derived demand – activity is driven by other economic sectors that demand transportation services – these sectors could not exist without it because transportation delivers their inputs and their final products to market
- Our current official statistics do not accurately reflect the true economic importance of transportation and significantly underestimate true activity largely because the focus is on for-hire or activities of firms whose sole business is moving goods, and not accounting for all the goods moved and impacts associated with private movements – firms who transport their own goods (e.g farmers trucking grain to market).
- Transportation is not a sector in the economy like "chemicals" or "computers" - it is an aspect of the overall economy like exports or production – commodities and markets may change and disappear but transportation is a constant.
- Transportation represents a significant cost in the export of goods and plays a key role in Alberta's ability to compete effectively in Global markets.

The first point above is the basis for arguing that transportation should be higher on any public or economic development agenda. To quote one industry perspective: "In Canada, transportation and trade are joined at the hip. If you can't provide transportation, you can't provide trade."[12] Given the prominence of the export component of Alberta's economy, and the forecasted growth in this sector, this point becomes even more critical. At the same time, it is essential not to lose sight of the fact that beyond the export component of the economy, transportation's role is equally vital. Alberta's internal production and consumption also functions on a transportation foundation.

Related to the second bullet, above, is the issue of the inability of analysts to accurately quantify and capture the role of transportation. For example, in trucking, there is a major distinction between the for-hire segment – firms that carry goods for compensation – and private or in-house trucking where a company like Safeway has their own fleet of trucks that carry their own goods. Similarly, farmers that truck their goods or construction companies that truck their materials may not be reflected in official statistics.

In the U.S. for example, much has been made of a recent switch to the use of a "transportation satellite account" within their national accounting framework. Essentially this is a much more detailed approach to capturing transportation activity within the economy, leading to very different GDP calculations since they include private or in-house transportation. They estimate that up to 50% of overall activity and economic impact had been missing under the previous approach[13]. This new satellite accounting approach has been adopted for other sectors in Canada (e.g. tourism) but not for transportation. A recent study of Manitoba's trucking sector similarly found that private or in-house transportation represented a major portion of overall trucking activity[14].

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[10] Potyondi, B. (2003) The Logic in Logistics, Business in Calgary, April 2003, pp.14-19

[11] Ibid, footnote 9

[12] Robertson, R. (2003) Winding Road Ahead, Materials Management and Distribution, Jan./Feb 2003, p. 14

Another key finding in the U.S. study was that the new accounting approach altered the perspective on which economic sectors relied most heavily on transportation services. While sectors like agriculture and manufacturing are major transportation users, their research concluded this was also true for sectors like construction and even elements of the service sector. This finding in particular has important implications considering Alberta's move towards a more value-added economy.

The bottom line is that while official statistics give us a good sense of what's going on, they do not reflect the complete picture and therefore should be viewed with caution. To quote the U.S. study:

"Transportation may have a greater influence on the competitiveness of U.S. products in international markets than previously thought, and the economic benefits of transportation infrastructure investments are larger (up to 5 times) than estimates based on for-hire transportation data alone".[15]

Transportation is a very dynamic sector and the increasing prominence of seamless logistics in the scheduled economy and the use of intermodalism have presented new challenges in terms of tracking and quantifying importance and impacts. On the logistics side, widely varying estimates of the size of this sector range from a few billion dollars to over a hundred billion in Canada alone[16].

Action Item:

> The Alberta Government increase its efforts to work with industry, other levels of government, and other governments in ensuring that more accurate and timely data reflecting the true contribution of the transportation sector is collected on an ongoing and timely basis and is used to enhance our understanding of the transportation system and its needs.

In meetings and discussions with multiple stakeholders, the observation was made that consultation with the citizens of Alberta continues to grow in importance, particularly as the economy develops towards value-added. The issue of infrastructure funding for both renewal and new development was raised constantly. Differing priorities for infrastructure funding were expressed. It was recognized that funding for infrastructure in Alberta is not infinite and that priorities expressed by stakeholders are not consistently agreed to. This leads to the suggestion that ongoing input into provincial infrastructure funding by all stakeholders is important.

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[13] BTS (Bureau of Transportation Statistics), (1998) The Economic Importance of Transportation Services: Highlights of the Transportation Satellite Accounts, BTS/98-TS/4R, April 1998

[14] University of Manitoba Transport Institute, (2000), Economic Impact, Structure & Market Perspectives of the Manitoba Trucking Industry, report prepared for Manitoba Department of Highways & Government Services, Manitoba Trucking Association

[15] Op cit, BTS footnote 13, p 22

[16] Bess, I., and McKeown, L. (1997) The emergence of logistics services: Measurement issues, Statistics Canada, Services Division, Catalogue no. 63-016-XPB, Ottawa

Action Item:

- In determining future funding allocations for Alberta's transportation infrastructure, Alberta Transportation will hold regular annual meetings jointly with transportation stakeholders from all modes and municipalities. At this meeting, transportation stakeholders will have an opportunity to identify strategic opportunities, their infrastructure needs, funding proposals, and provide comments to Alberta Transportation. The Government, on the basis of these discussions and their own internal review, will then determine the allocation of funds for transportation infrastructure investment.

2.3 The Transportation Sectors

In the following sub-sections of this chapter, a brief overview of the various modes is presented. The focus in each is on the importance and impact of these sectors, particularly as they relate to Alberta's economic vitality and performance.

2.3.1 Road

Alberta's Road System

Alberta primary and secondary highways are composed of 30,000 km of road and 3,800 bridges, for which Alberta Transportation is directly responsible. The rural road system consists of 135,000 km of roads and 8,800 bridges for which the Province provides a large portion of funds for upgrades and maintenance. The replacement cost of the total road and bridge system in Alberta is estimated at over $52 billion.

Alberta Transportation administers a $1.1 billion annual budget to care for the provincial road system. Of this, some 27% are grants to the municipal governments to maintain urban roads and/or secondary highways under their jurisdiction.

Commercial truck and bus mode segments of Alberta's transportation system, and the infrastructure on which it depends and performs, represents 15% of the total traffic on the highway system, the balance, being automobiles and light trucks and vans. This figure is higher for regional and rural roads and typically lower for major urban routes (according to Alberta Transportation figures).

Canadian Bus Industry

The bus industry in Canada is generally considered to consist of: inter-city bus services; school bus service; urban transit service; and charter services. In addition to passengers, bus parcel express is a significant market for inter-city carriers.

Motor Coach Canada, Inc. (MCC), the main spokesman for the industry, reports that the industry provides scheduled services to 3000 communities (rail services less than 500), using 3000 buses providing up to 60 million passenger-trips (VIA moves 4 million), through 295 companies employing some 15,000 people. MCC further states that each bus contributes $7,000 -10,000 per day, per coach, to the economy and directly supports a total of 169,000 jobs in the country in all its functions.

The Canadian Trucking Industry

The trucking industry in Canada is made up of thousands of companies, many of them small and family-owned. In Canada, truck fleets that carry freight for other companies are called "for-hire" truckers and make up about 60% of the industry. The balance is private trucking where a company (e.g., manufacturing, retail, or resource company) owns and operates its own vehicles.

The Canadian Trucking Alliance (representing the provincial trucking associations) in a recent survey, published information putting the total heavy truck population in Canada at 580,000 (i.e., vehicles with gross weight above 4,500 kilograms). There are 700,000 registered trucks in Canada, in all categories. Canadian heavy trucks generated 18.6 billion vehicle-kilometres in 2001, earning a total of $52.5 billion in revenues[17].

Alberta's Trucking Industry

Alberta accounts for a full 25% of the total heavy truck population in Canada, which, along with Ontario (39%) and Quebec (11.5%), represents 75% of the total Canadian fleet. B.C. has but 5%, the same as Manitoba, while Saskatchewan accounts for 8.5%[18].

Of the approximate 145,000 total registered trucks and buses in Alberta, approximately 35,000 are commercially licensed and are registered with gross vehicle weight (GVW) capacities in excess of 11,000 kgs, requiring a Class 1 driver's license to operate. These units carry the bulk of commercial freight into, out of, and within the province.

Total traffic volume (including automobiles and recreational vehicles) in Alberta is increasing by 3.5% per year, and over the next 10 years could increase by 40%. Registrations of heavy trucks, by contrast, have increased by 270% in the last 10 years, reflecting the rapid economic growth in the province, specifically in resource project construction and oil and gas exploration activity, and particularly in the Peace River and Fort McMurray regions[19].

Over 60% of all freight moved within the Province (excluding pipeline volumes) is moved by truck.[20] The "for-hire" trucking segment grew 48% from 1995 to 2000, an average of almost 10% per year[21]. This reflects the trend by shippers to contract out transportation of their goods

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[17] Canadian Trucking Alliance (2003) "The Trucking Industry, FAQ", http://www.cantruck.com/industry/faqs.htm, accessed Sept., 2003

[18] Ibid, footnote 17

[19] Source: Alberta Transportation – Truck Registration Statistics

[20] Source: Consulting Engineers of Alberta – Submission to Province of Alberta Financial Management Commission

[21] Ibid: footnote 20

to commercial carriers, previously carried by their own trucks (e.g., oil company petroleum product distribution); and diversification of industry in Alberta from rail-oriented resource segments to secondary and high technology manufacturing, more suited to truck transport; healthy resource industry construction activity; and expanded oil and gas exploration and production within the province.

Alberta's export market is a prominent piece of our economic fabric. Canada, as a whole, is more reliant on exports than most major nations, 5 times that of the U.S. The U.S. is the largest single consumer of our exports, and trucking is often the mode of choice for getting value-added goods to U.S. destinations. From 1996-2001, Alberta's total North American truck exports grew in value by 97%, which exceeded the growth rate of any other non-pipeline transportation mode.

2.3.2 Rail and Intermodal[22]

Alberta is served by Canadian National (CN) and Canadian Pacific Railway (CPR), the two transcontinental Class 1 railways in Canada. Both railways provide heavy haul rail corridor connections to major market gateways on the West Coast, in the East and the U.S. Midwest. Alternate rail gateways available to Alberta shippers include Burlington Northern Santa Fe (BNSF) at Shelby, Montana (56 km south of the Alberta border) and BC Rail at Dawson Creek, B.C. (42 km west of the Alberta border).

The Canada Transportation Act (1996) has facilitated Class 1 Railway rationalization in terms of branchline abandonments or transfers to short line operators. That rationalization process is essentially complete in Alberta and four regional short lines now operate the former Alberta Resources and Northern Alberta Railway network extending from the Canadian National mainline[23].

These regional shortlines extend the option of rail access into Northern Alberta along major resource development corridors:

- Lakeland and Waterways Railway (LWR) and the Athabasca Northern Railway (ANR) parallel Highway 63 to the Fort McMurray staging area for oil sands projects.
- Mackenzie Northern Railway (MKNR) parallels the Mackenzie Highway (Hwy. 35) to the Mackenzie River barge terminal and tanker truck transfer point at Hay River, NWT.
- Alberta Rail Net (ARN) parallels Highway 40 and Highway 2 to the Alaska Highway and British Columbia Railway (BCR) gateway at Dawson Creek, B.C.[24]

All of these were former CN lines. Transfer to shortline operators has retained a very substantial regional railway component in Alberta that may otherwise have been abandoned as

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[22] Information depicted in this section is derived from multiple sources including Statistics Canada, The Railway Association of Canada, Vancouver Port Authority and Alberta Transportation.

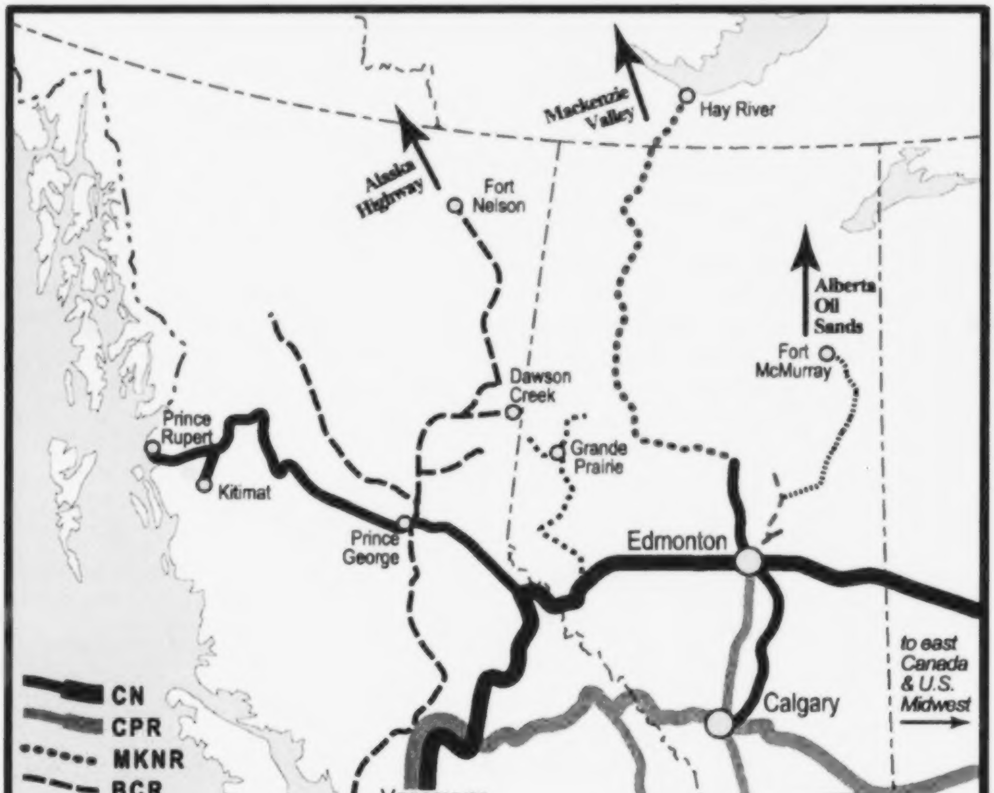
[23] Central Western Railway(CWR), which was the first short line in Alberta, has now been virtually abandoned

[24] The Hythe-Dawson Creek portion of this is line is currently retained inactive by CN

part of transcontinental railway rationalization. In turn, Alberta shortlines have been rationalized and merged into what is becoming a highly sophisticated segment of the railway industry including North American RailNet (ARN) and Rail America (MNKR, LWR and CWR).

Regional shortlines continue to serve Northern Alberta shippers with connections to Class 1 mainlines as before, but under a locally oriented, independent cost regime that has increased productivity and prolonged viability. Over the next ten years, in addition to supporting new agriculture and forest industry initiatives, Alberta regional shortlines will provide a critical connection for development of the oil sands, arctic gas, and northern mines.

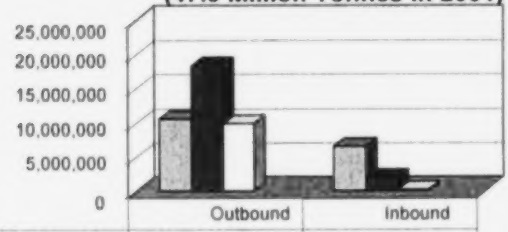
The connection of these regional railways to the transcontinental rail system serving Alberta is shown in the following map.


Mackenzie Valley
Hay River
Alaska Highway
Fort Nelson
Alberta Oil Sands
Fort McMurray
Dawson Creek
Prince Rupert
Grande Prairie
Kitimat
Prince George
Edmonton
to east Canada & U.S. Midwest
Calgary
Vancouver
CN
CPR
MKNR
BCR
ANR
LWR
ARN
0 100 200 300km
to U.S. west coast
BNSF

There are 4,279 miles of track in Alberta operated by over 6,000 railway employees receiving $400 million in annual compensation (Railway Association of Canada figures). However, the economic impact of rail in Alberta is more than these figures would indicate.

Including domestic trade, the total of rail traffic moved in and out of Alberta is almost 50 million tonnes per year. However, most of this is outbound traffic and most of the outbound traffic is for Alberta international exports, either offshore or transborder to the United States and Mexico.

Alberta Rail Traffic Flows (47.9 Million Tonnes in 2001)

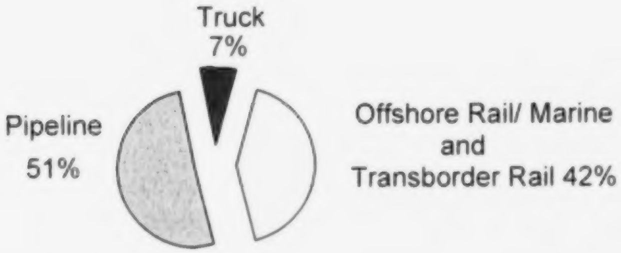


	Outbound	Inbound
▨ Canadian Domestic	10,600,000	6,600,000
■ International Offshore	18,400,000	2,100,000
□ International Transborder	10,000,000	200,000
Total Rail Tonnes	39,000,000	8,900,000

Source: Alberta Transportation and Trade Report 2001: Statistics Canada Trade Merchandise database custom tabulation prepared for Alberta Transportation

The Alberta economy is oriented toward international trade, moving some 68 million tonnes of exports to foreign markets in 2001. After pipeline commodities, rail moves most of those exports from Alberta by weight.

Alberta Transborder / Offshore Exports
(68 Million Tonnes in 2001)



Source: Alberta Transportation and Trade Report 2001: Statistics Canada Trade Merchandise database custom tabulation prepared for Alberta Transportation

Total export tonnes moved by rail are only 9% less than the total of pipeline exports; and 86% of non-pipeline tonnes move by rail - either to offshore export position or transborder to the United States.

High-speed Rail

The Government of Alberta has commissioned a pre-feasibility study for a high-speed rail link between Calgary, Red Deer and Edmonton. The growth in population being experienced in Alberta is significant. In particular, the growth in the Edmonton/Calgary corridor creates an unparalleled opportunity to capture and focus a pattern of growth that will result in a corridor of economic power being developed between the three centres.

A focused planning strategy for the linking of Calgary/Red Deer/ Edmonton could result in these communities being viewed as one economic unit by North American and world communities. Introduction of high-speed rail could build upon, or be the catalyst for the policies of regional transportation authorities that would guide the development of regional transportation infrastructure connecting into the high-speed rail system.

High-speed rail could address the ecological concerns created by increasing congestion and pollution in the corridor. High-speed rail has become a great success in other countries linking major centres and resulting in the revitalization of old city cores. The establishment of a high-speed link has also generated new real estate development and business activity in the proximity of the terminals and generally enhanced industrial investment.

2.3.3 Air

A number of Alberta-based aviation advocacy groups representing various facets of the industry have recently merged into a new organization called Aviation Alberta, which provides for a unified and coordinated approach on important industry issues.

Aerospace manufacturing in Alberta currently accounts for about 1,000 jobs while air transportation services in the province account for another 13,200 jobs, made up of the scheduled airlines at 7,300, the non-scheduled operators at 1,400 and related support services at 4,500. [25]

Alberta's scheduled airports currently handle over 12 million passengers a year and over 150,000 metric tonnes of cargo. The two major airports at Edmonton and Calgary, where most of the province's airport activity occurs, together account for an annual total economic impact of $4.75 billion.[26]

The Alberta aviation network is made up of two major international airports at Calgary and Edmonton and a system of ten smaller scheduled airports at other communities located throughout the province. Edmonton is also served by the City Centre Airport which provides services to small charters, private and corporate aircraft, training, military, industrial and medi-vac flights. Scheduled flights at this facility are presently limited to a maximum of ten passengers and are expected to be consolidated to Edmonton International on January 1, 2005. Cargo traffic was moved to Edmonton International on January 1, 2004.

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[25] Alberta Transportation

[26] Edmonton Airports and Calgary Airport Authority

These airports are linked to each other and scheduled airports throughout Alberta and elsewhere through a network of mainline, regional and feeder air services. There are also 150 non-scheduled airports situated throughout the province that are developed to differing standards and experience varying levels of traffic.

Alberta Air Trade

Alberta's historic performance in import/export markets, including the rest of Canada, illustrates the growing importance of the air cargo mode in the movement of high-value and time-sensitive goods.

According to Alberta Government figures[27], in 2001 Alberta imported $3.3 billion worth of goods by air and exported $1.6 billion, reflecting an imbalance favouring the inbound direction and illustrating the comparatively under-developed nature of Alberta's manufacturing and value-added sectors.

Further illustrating the point, in 2001 the air transport mode carried 7.2 percent of the value of Alberta's total non-pipeline exports. By value, air exports increased by 46 percent during the 1996-2001 period and, by volume, 165 percent. During the same period the value of air imports grew by 81 percent.

Virtually all air import traffic moved over Calgary and Edmonton. On the export side, 72 percent originated in Calgary, 15 percent originated in Edmonton and 11 percent was up-lifted in Vancouver, no doubt because of a shortage of up-lift capacity in Alberta and the resulting leakage of traffic to the westcoast by surface transport.

Of the $1.6 billion that Alberta exported by air in 2001, 51 percent was destined for the U.S. The top ten countries for Alberta air exports are summarized in the following table.

2001 Alberta International Exports by Air
Top 10 Countries[28]

United States	**$796 million**	**51%**
United Kingdom	**77**	**5**
Taiwan	**61**	**4**
Japan	**50**	**3**
France	**48**	**3**
Italy	**47**	**3**
Hong Kong	**40**	**3**
Australia	**35**	**2**
Singapore	**27**	**2**
United Arab Emirates	**24**	**2**

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[27] Alberta Transportation, '2001 Alberta Transportation and Trade Report', Alberta Air Trade
[28] Ibid.

Of the $796.2 million that was exported by air to the U.S. in 2001, the top ten states were as follows.

2001 Alberta Exports to the U.S. by Air
Top 10 States[29]

New York	**$181 million**	**23%**
Texas	**79**	**10**
California	**72**	**9**
Tennessee	**65**	**8**
Florida	**51**	**6**
Illinois	**21**	**3**
Georgia	**20**	**3**
Washington	**20**	**3**
New Jersey	**20**	**3**
Indiana	**15**	**2**

The four largest export categories were electronics, machinery, photo-medical equipment and meat products, representing 88 percent of the air export total. By value, the four largest import categories were electronics, machinery, aircraft parts and photo-medical equipment, accounting for 85 percent of total air imports.

2.3.4 Logistics and Warehousing

Warehousing and logistics have been an important component in Alberta's transportation scene for decades. However, more recently, the information revolution associated with the internet and e-commerce has translated into a major shift in how these two facets relate. Supply chain management and logistics is much more time oriented – representing the "scheduled economy" and the notion of a warehouse – where inventories sit for long periods – has been replaced by distribution centres and just-in-time (JIT) production where the inventory rolls on the highway or rails and is delivered as needed.

Supply chain management is the industry term that is often used to describe this. It is defined as:

"Planning and coordinating the materials flow from source to user as an integrated system rather than, as was so often the case in the past, managing the goods flow as a series of independent activities…the goal is to link the marketplace, the distribution network, the manufacturing process and the procurement activity in such a way that customers are serviced at higher levels and yet at lower cost. In other words to achieve the goal of competitive advantage through both cost reduction and service enhancement."[30]

In Alberta, Edmonton and Calgary represent the two major logistics and warehousing hubs. In Calgary, since 2000, over 3 million sq. ft. of distribution facilities have been developed, as firms like Sears, Canadian Tire, and third party logistics provider, SCM (the company servicing WalMart's operations in Western Canada) have set up operations. As mentioned previously, this sector is close to being the number one employer in Calgary – for many, a recognition that immediately challenges traditional thinking. Firms have been drawn to locate, in Alberta by a number of factors: affordable and developable land, a skilled workforce, a central geographic location and a well developed transportation system providing vital access to markets.

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[29] Ibid.

[30] Christopher – 1999, quoted by Athabasca University, Centre for Innovative Management, Supply Chain Collaboration Survey 2002

2.3.5 Pipeline

The pipeline network in Alberta is the Oil and Gas sector's highway system and is almost as lengthy as our road network. This largely subsurface system is typically treated as unique in transportation and in many cases, is isolated from broader transportation studies. This is true in this report as well, where pipeline transportation was not in the terms of reference. However, most Albertan's appreciate that pipelines carry our largest single export, oil and gas, to markets and is the circulatory system of our major industry sector.

There is inevitability to the future development of one or more pipelines to carry natural gas from the Canadian Arctic and Alaska to North American markets. It appears that within the next decade an all-Canadian pipeline, will be built first. Alaskan gas will later be transported along either the Alaska Highway route through Alaska, Yukon, and northern BC, or the "over-the-top" route through the Beaufort Sea and along the Mackenzie Valley, generally following the Canadian "stand alone" pipeline corridor.

Large-scale logistics operations to complete material movements within the planned construction schedules pose the potential for significant impacts to the territorial transportation systems for each of the alternative project routings. In Alberta and British Columbia, subject to certain rehabilitation requirements, existing rail and highway systems have adequate capacity to facilitate the scheduled material movements detailed in current construction plans. Rolling stock for rail transportation (mainly fuel and pipe) is available from existing fleets, as are trucks to move materials from railheads to pipeline stockpile sites [31].

2.4 Conclusion

This chapter opened with an argument that transportation is underappreciated and perhaps undervalued by not only the general public but by decision makers in government and industry. It is hoped that this perspective will change in the future. Certainly the facts and discussion in this chapter would strongly support this. Regardless of unit of measure – jobs, economic impact, both direct and in-direct, societal importance – transportation is without question, a vital component of our current success and future prospects.

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[31] Source: Prolog Canada Inc. (2003), Arctic Gas Pipeline Construction Impacts on Northern Transportation, report prepared for Transport Canada, Prairie and Northern Region

Chapter

3

3 Future Prospects: An Economic Forecast

The initial sections of this report have outlined the critical role of transportation to Albertan's both, from a social and economic standpoint. The following chapter provides forecasts for various economic sectors in Alberta and then relate these forecasts to changes in demand for transportation services. The essential questions being addressed in this section are

- What are the forecasts for key sectors of Alberta's economy looking forward to 2010?
- How do these forecasts translate into changes in transportation services demanded?

The details on data sources, forecasts, and results are described completely in Appendix C.

3.1 Economic Activity 2004 to 2010

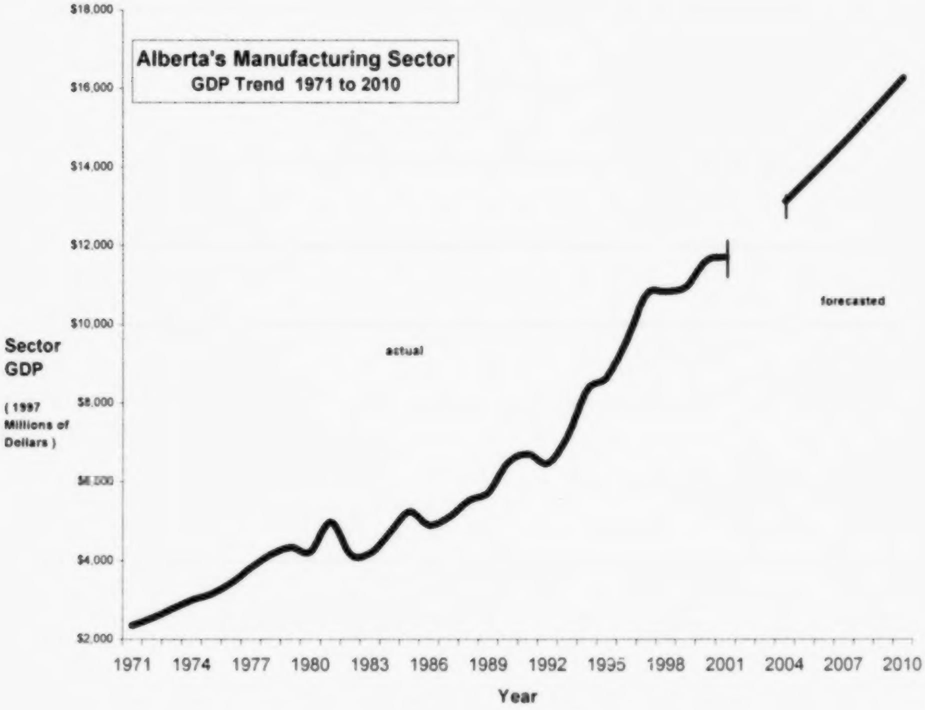
Econometric analysis was used to produce forecasts of growth in each main sector of Alberta GDP through the year 2010. The manufacturing sector provides the majority of future growth in value-added production, so forecasts for the components of the manufacturing sector are also provided. The forecasts of future growth in each industry sector are transformed into the corresponding increases in transportation demand for rail, truck, and air. In this chapter, only the output of the forecasting model is discussed, focusing on the value-added sectors and on the implications for future transport demand. Because independent empirical analysis is crucial to the forward-looking nature of this study, a long appendix that contains the details of the specification, estimation, and validation of the forecasting model, has been provided.

The following figures show plots of the historical data on the various industry sectors for the interval 1971-2001 and the forecasts over the interval 2004-2010. At the time the statistical analysis was conducted, the most current complete year of Alberta GDP data was 2001.

Because 2002 and 2003 data may be released shortly after this report is in print, and because they are years of extreme events including SARS, mad cow, drought, and the aftershocks of 9/11, the forecast begins in 2004. The final year of the forecast period is 2010; forecasting farther than this into the future is imprudent because the forecasting model loses precision rapidly as the forecast horizon increases.

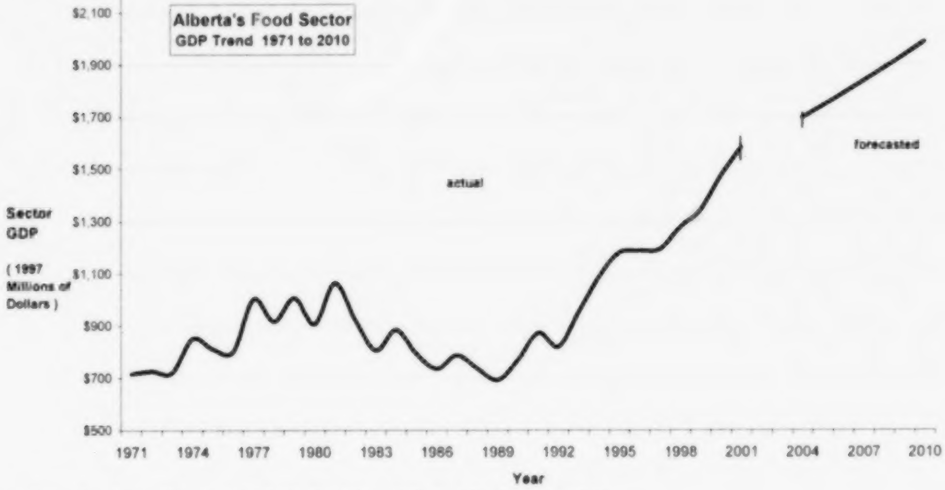
Of note when reviewing the next series of graphs:

- the fact that the y-axis scale (GDP Value) varies for each economic sector
- the more variable the actual history, the greater the potential range in the forecast
- all data provided by Alberta Economic Development: forecast details are outlined in Appendix C



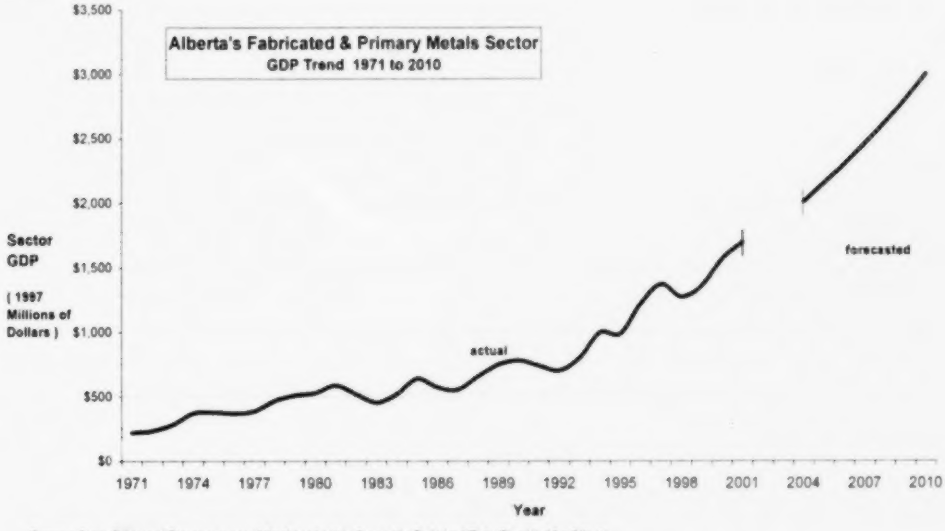
In the case of manufacturing, the third largest sector of our economy and characterized as value-added, substantial growth is forecasted. The forecasted growth to 2010 (from a base year of 2000) is 40%. For comparison purposes, consider that from 1990-2000, GDP for this sector actually increased 80%. The growth in manufacturing will translate into increased activity for the major modes. Trucking is the key and dominant mode for manufacturing and this will continue. However, containerization (inter-modal) is translating into greater activity for rail on portions of routes. Air cargo is also driven in part by higher value electronic and machinery components (oil field equipment for example) as well as specialized commodities that can absorb the comparatively higher shipment costs. The bottom line is that growth in manufacturing translates into greater demand for all modes, but particularly trucking.

Looking at the sectors that make up the broader category of manufacturing presents insight into the growth of specific value-added sectors. Among the most important manufacturing sectors are Fabricated Metals, Food, and Chemicals; they are the top three in manufacturing and represent over 50% of sector activity (2001 figures).



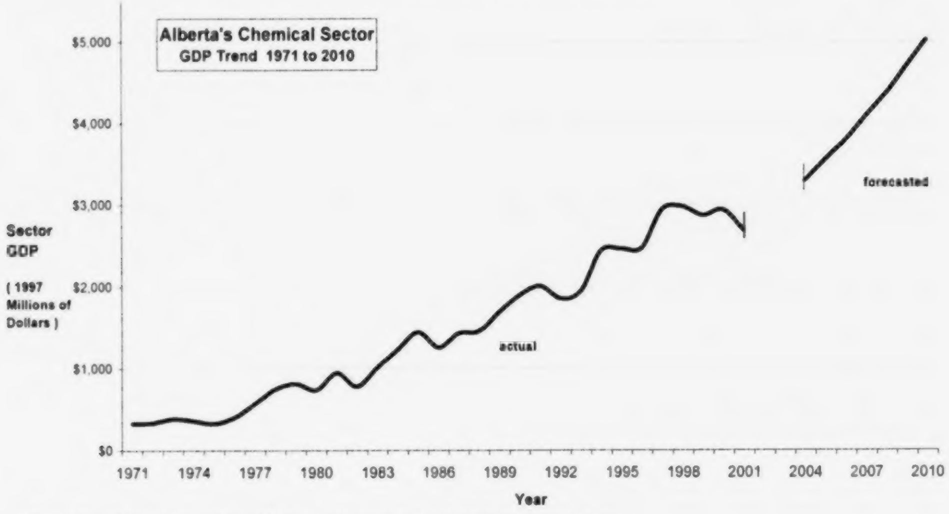
Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

The food sector experienced resurgence in the last decade and forecasts points to continued growth of nearly 25% out to 2010. Fabricated and Primary Metals have exhibited steady growth that has accelerated recently. Figures indicate this sector is poised for impressive growth of 77%. As a comparison, its actual GDP change from 1990 to 2000 was just over 100%



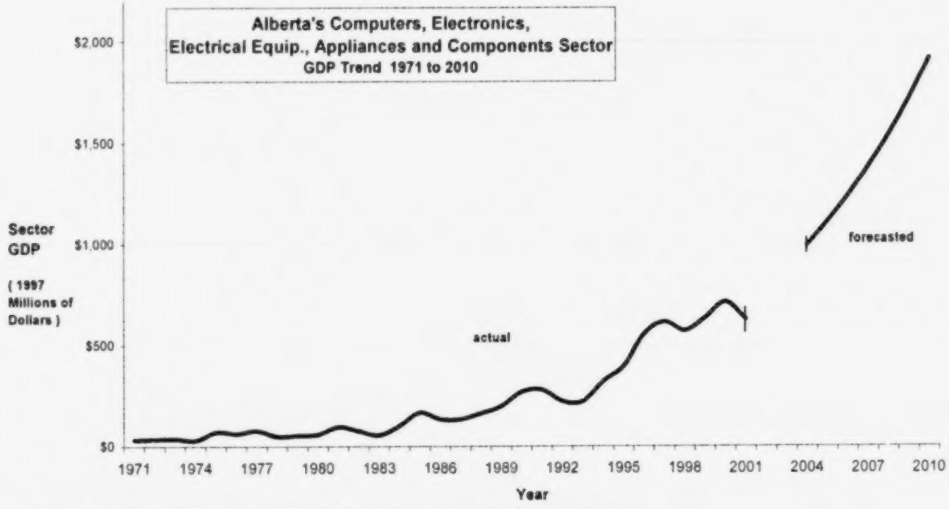
Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

Chemicals (depicted below) represent the largest component of the manufacturing sector and its forecast is the most impressive of the top 3 at 87%. In comparison, this sector grew by 55% between 1990 and 2000. In this sector, the forecasted growth will likely have more of an impact on rail than other modes. Rail is often the preferred mode given the characteristics of the chemical market- bulk goods with often hazardous elements.



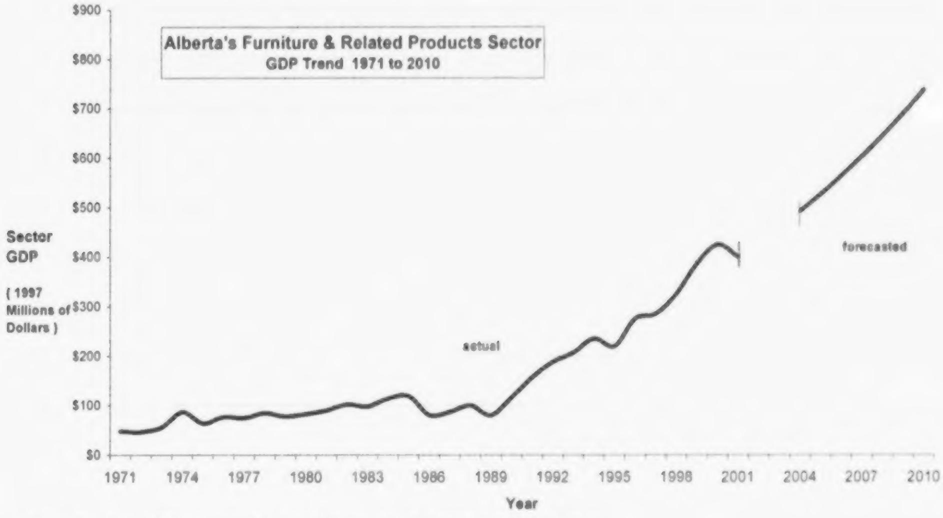
Source: Base Data and Forecast more fully described in Appendix C: Actual Data Provided by Alberta

From a layperson standpoint, the Computers, Electronics, Electrical Equipment, Appliances and Components (hereafter referred to as Computers and Electronics) is perhaps most identifiable as a value-added sector and a critical part of the high tech economy. Its forecast illustrated in the graph below, is for the largest growth of any sector analyzed at, 205% .

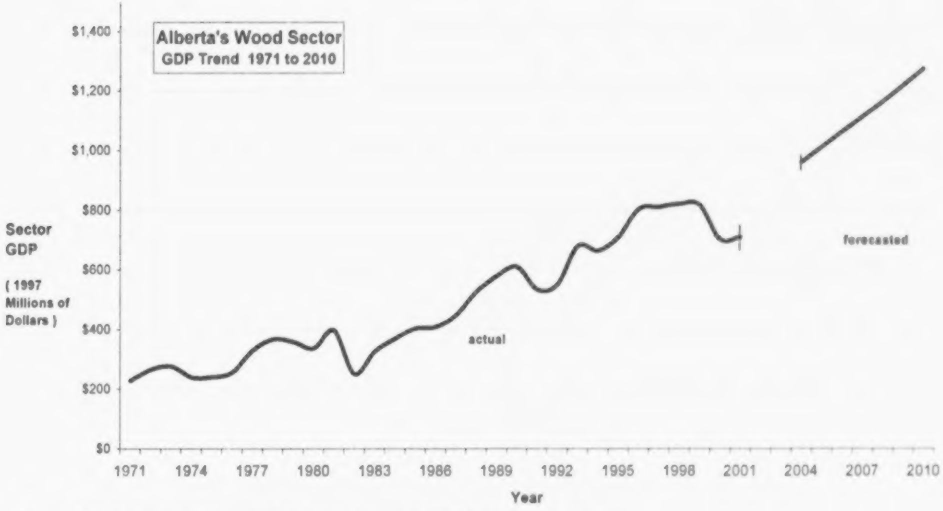


Source: Base Data and Forecast more fully described in Appendix C: Actual Data Provided by Alberta

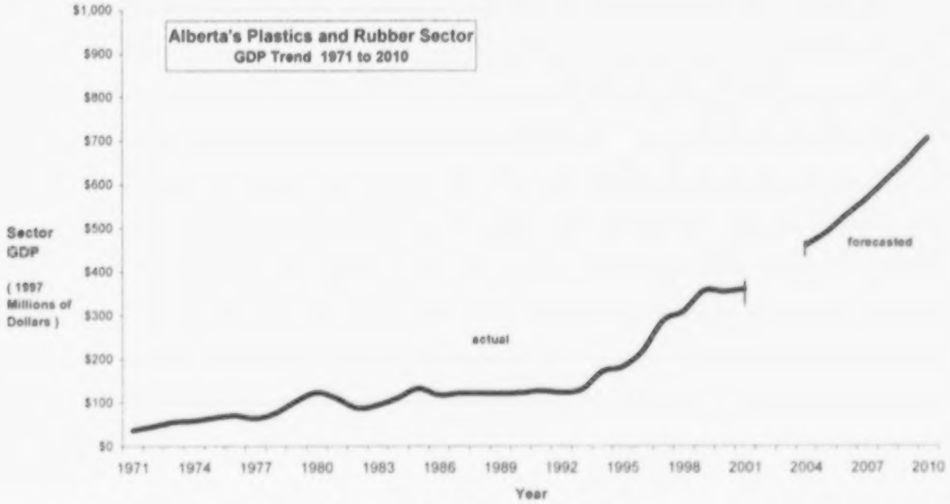
The following collection of graphs represents the mid-grouping of manufacturing sectors with respect to their contribution to manufacturing GDP. Each sub-sector exhibits strong growth, ranging from 63% for Paper and Allied Products to 96% for Plastics and Rubber over the 2000 to 2010 period.



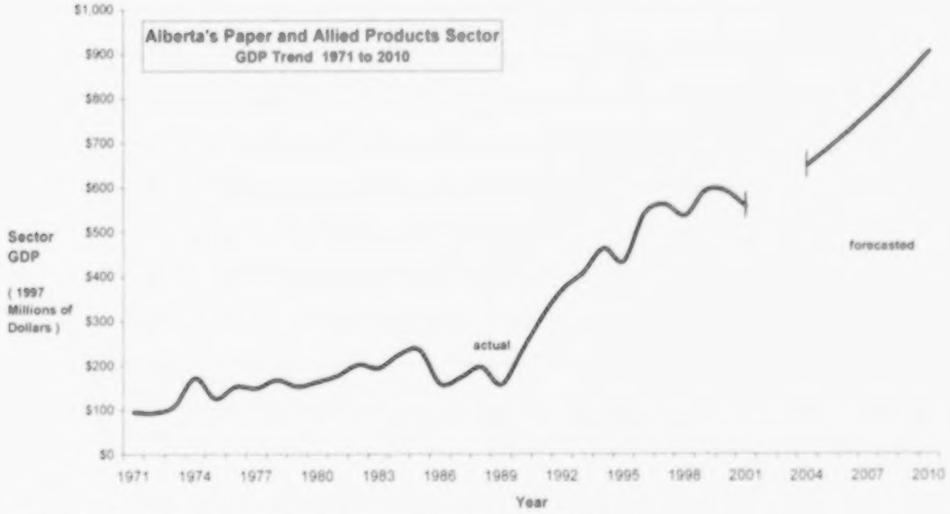
Source: Base Data and Forecast more fully described in Appendix C: Actual Data Provided by Alberta



Source: Base Data and Forecast more fully described in Appendix C: Actual Data Provided by Alberta



Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

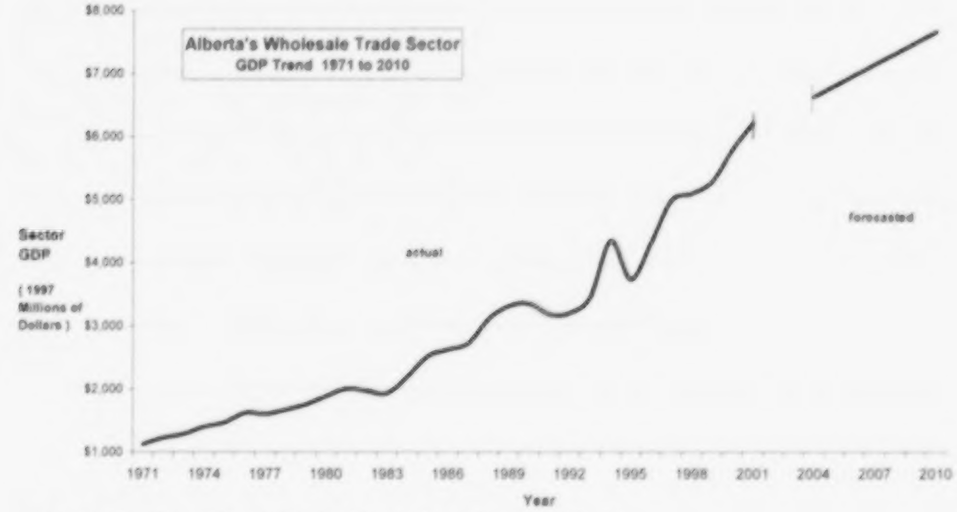


Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

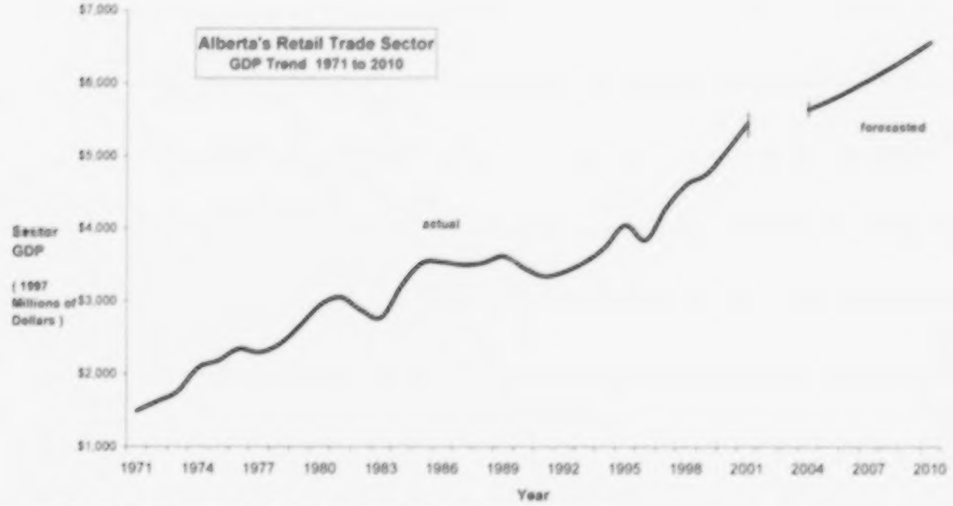
It is clear from a closer look at manufacturing this value-added sector is not only important to Alberta's economy, but is forecasted for strong growth in the future. For the majority of these sub-sectors, this growth will translate into more trucking activity, but rail (often via containerization and inter-modal) and air will also see increasing activity as a result.

Returning to the broader categorization of Alberta's GDP, the figures below, illustrate the future trends for Wholesale and Retail Trade, two sectors traditionally viewed as heavily reliant on transportation services. Their growth prospects between 2000 and 2010 are 23%

and 20% respectively. These figures are not as large as others reviewed thus far, but they are much more reliable figures, in that the error associated with this forecast is much smaller.

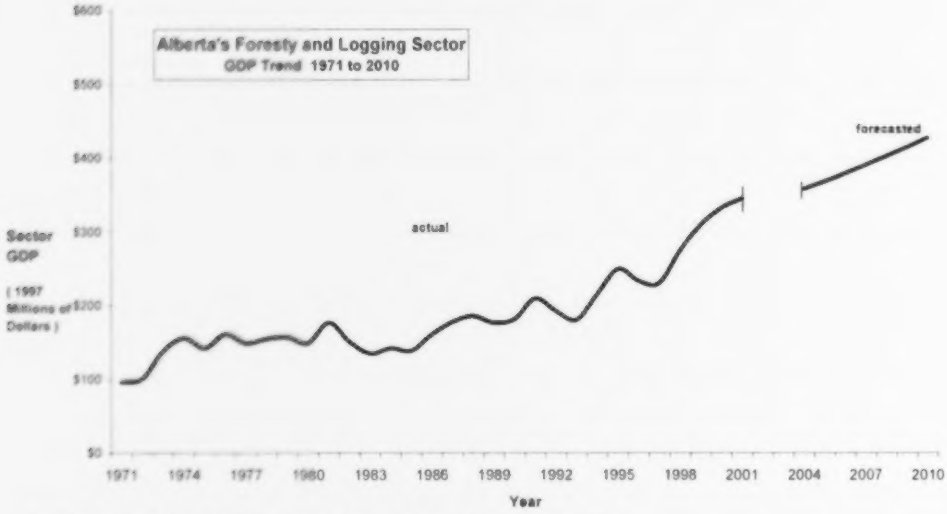


Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

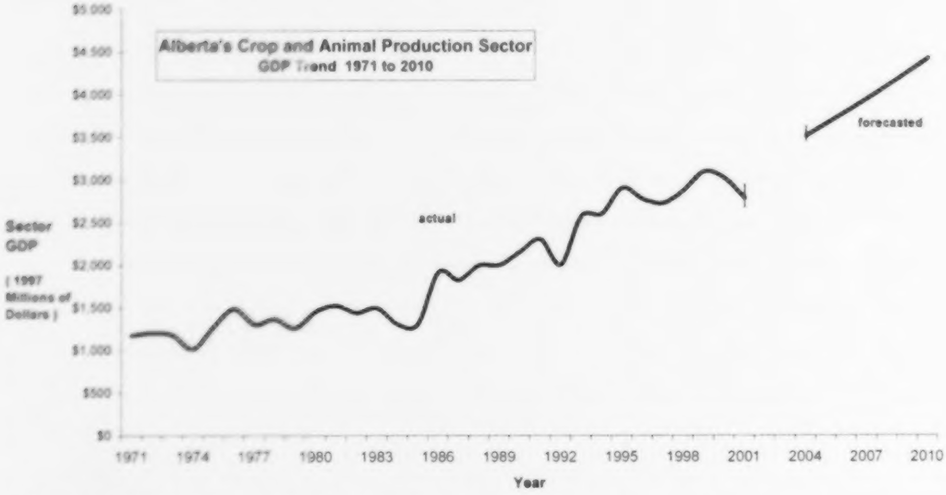


Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

The sectors discussed thus far tend to be associated with heavy reliance on modern supply chain logistics and by default, trucking and to a lesser extent air and inter-modalism. However, considerable innovation and use of modern practices is associated with resource and commodity sectors in which transportation costs are a major portion of final product prices. It is therefore useful to examine future prospects for those sectors as well.



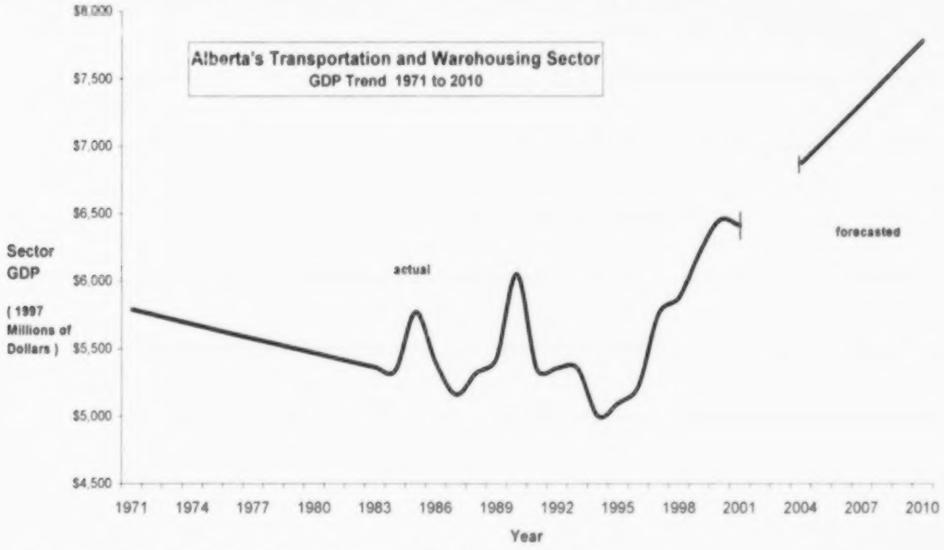
Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta



Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

In the case of both the forestry and agriculture sectors, there has been historic volatility, driven by the nature of commodity markets, which tend to swing with weather and global market changes. Despite this, both sectors exhibit moderate growth in the forecast period, Forestry at 23% and Crop and Animal at an impressive 60%. As will be argued in the following section on transportation demand, these sectors still remain more sensitive to transportation in terms of their competitiveness, and as these sectors move towards more value-added activity, it is likely that their reliance on transportation will not only continue, but increase. On the agriculture side, containerization is becoming more widely used, in part because of the need for "identity preservation" of specialty crops and by-pass of traditional grain-hopper car operations. This implies more trucks on the roads moving containers to inter-modal facilities for onward movement to export markets but also, more activity for the rail segment. A similar use of containerization for export markets is having an impact on forestry, translating into increased trucking and rail activity depending on the market.

Given transportation's unique, derived demand nature, it is not surprising that its historic GDP component reflects more sharply, the overall trends in other sectors, and the economy as a whole. There is speculation that part of the inconsistency viewed below is related to statistical issues and changing methods of capturing data rather than industry changes. According to estimates, this sector is expected to grow 21% between 2000 and 2010.



Source: Base Data and Forecast more fully described in Appendix C. Actual Data Provided by Alberta

The forecasted growth in this sector is substantial, but perhaps not as impressive as growth in other sectors reviewed like manufacturing and its sub-sectors. However, it is essential to appreciate and re-iterate the fact that transportation is not like other economic sectors. It is fundamental to the economy, a part of its central functioning. Further, it is a challenge to accurately capture transportation activity in official statistics like those on which the above figure is based. There should be no doubt that as our economy expands, transportation will respond and grow in kind – more trucking, more rail activity, more air cargo and more inter-modalism between all three.

3.2 Traffic Demand 2004 to 2010

For each transportation mode in this section a forecast of future demand in response to future economic growth in the main value-added sectors of the Alberta economy, is provided. The details of the approach taken are provided in Appendix C. Briefly; historical information on trucking, rail and air activity in Alberta has been used to develop a responsiveness to economic activity - linking dollar value of sector output with a tonne-kilometre of modal activity. Following that, forecasted changes in economic activity are used to establish what this will translate to in terms of activity output for the various modes.

Trucking

The table below contains point estimates of the percentage increase in tonnes of trucking, from a base year of 2000 for three key sectors in the City of Calgary. These estimates are based on examining the activity of for-hire trucking firms and the goods they typically ship. The economic forecasts of the previous section represent growth in demand for transportation services. The specific amount of that growth in demand is captured in the table below.

Calgary For-hire Trucking Demand Growth
(percent from 2000 base)

	Industry Sector		
Year	Forestry	Manufacturing	Wholesale
2004	6.463	18.668	9.177
2005	8.929	25.044	11.064
2006	11.607	31.774	12.952
2007	14.427	38.870	14.839
2008	17.362	46.355	16.727
2009	20.398	54.249	18.615
2010	23.534	62.574	20.503

Source: Calculations documented in Appendix C

Given the forecast growth in these sectors, and transportation's responsiveness to these sectors it is not surprising to view substantial forecasted output growth in trucking. Manufacturing as the critical value-added sector, is highly reliant on trucking. This is particularly true with the adoption of Just-in-time (JIT) production methods, which minimize plant inventories in favour of timely and flexible delivery of goods. The wholesale sector, focused on finished goods, is also heavily truck reliant. The value of the goods in relation to the cost of shipping implies that trucking is the mode of choice, especially when the need to reach a geographically diverse set of customers is factored in. Finally, forestry is a sector in which trucking and containerization are having a greater impact.

Edmonton For-hire Trucking Demand Growth
(percent from 2000 base)

	Industry Sector		
Year	Forestry	Manufacturing	Wholesale
2004	3.231	5.911	7.026
2005	4.464	8.167	8.471
2006	5.803	10.616	9.916
2007	7.213	13.196	11.361
2008	8.681	15.880	12.807
2009	10.199	18.657	14.252
2010	11.767	21.525	15.698

Source: Calculations documented in Appendix C

In Edmonton, the pattern of growth is similar, yet the absolute changes are not as great as is the case for Calgary.

Rail and Intermodalism

Rail output is typically much less sensitive to the change in output associated with the economic sectors explored in the analysis. The forecasted growth in their activity relative to the year 2000 is not substantial, but fits within the reality of modern rail transport. In the table below, it makes sense that there will not be considerable rail output growth associated with wholesaling, given the previous arguments made. In the case of manufacturing, the increase can be related to the prominence of intermodalism.

Alberta Rail Demand Growth
(percent from 2000 base)

	Industry Sector		
Year	Forestry	Manufacturing	Wholesale
2004	1.812	2.476	1.720
2005	2.504	3.322	2.074
2006	3.255	4.214	2.428
2007	4.046	5.156	2.782
2008	4.869	6.149	3.136
2009	5.721	7.196	3.490
2010	6.601	8.300	3.844

Source: Calculations documented in Appendix C.

Air

The high cost of air cargo transportation implies that only goods that can absorb these costs utilize this mode; it is a specialty, high value good mode of transportation. Subsequently, the bulk of air cargo activity is related to high value manufactured goods, or those with extreme time sensitivity. Our estimates of elasticities were therefore only calculated for Calgary, at 1.06 and Edmonton, at 0.06, for the manufacturing sector. These numbers suggest that in Calgary, information technology manufacturing output is what drives the relatively higher demand for air cargo, while in Edmonton, the low elasticity suggests that manufacturing in Edmonton does not rely extensively on air for goods movement.

Air Demand Growth in Output
(percent from 2000 base)

	Airport	
Year	Calgary	Edmonton
2004	20.383	1.142
2005	27.344	1.533
2006	34.692	1.945
2007	42.440	2.379
2008	50.612	2.838
2009	59.231	3.321
2010	68.321	3.831

Source: Calculations documented in Appendix C.

This conclusion is reflected in the above table of forecasted increase in demand, or tonnes of air cargo output related to manufacturing in Edmonton and Calgary. Quite clearly, Calgary is forecasted to see substantial growth in air freight out to 2010.

Chapter
4

4 Road Transport

The goal of this chapter is to provide an analysis of the major issues and future prospects facing the road transport sector in Alberta. The primary source of information is stakeholder input, obtained from a number of workshops and a series of interviews. The information was collected along two main themes – "current issues" and "future prospects". Within these themes, questions asked of interviewees pertained to infrastructure, government policy, carrier and firm operations and those related to human resource issues.

4.0 Motor Carrier Activity

Entry to the industry is largely deregulated and dependant only on the condition of the truck equipment to be operated and drivers with a demerit free, Class 1 license. Applicants for entry into the bus service industry must prove a case for public convenience and necessity, and historically, opposition to the issuance of competing licenses is aggressive.

The trucking industry is composed of motor carriers, - private (carry their own goods) and "for hire" trucking companies that specialize in moving a wide variety of resource products and value-added goods to urban, intra-provincial, inter-provincial, and export markets. A recent study analyzing truck traffic within the Edmonton Region[32] revealed that 72% of the trucks observed were owned by the company producing the goods being shipped, plus 10% operating leased vehicles. Most of these are used in local operations, however, and include such service vehicles as gravel trucks, delivery vans, redi-mix concrete trucks, etc.

The following graphic displays the volume of Alberta-originating freight moved by the for-hire trucking industry, in 2000, within and out of the Province - nearly 40 million tonnes[33] which is a 46% increase over 1995.

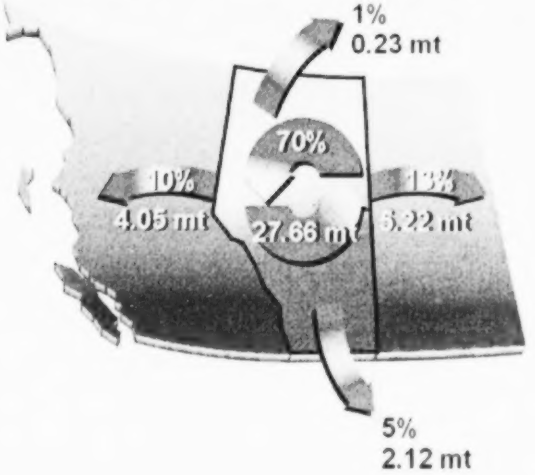
---

[32] Source: Edmonton Regional External Truck Commodity Survey

[33] Source of Information on all Charts and Graphs included in this section a combination of : Statistics Canada "For Hire Trucking Survey" and Statistics Canada Trade Merchandise database custom tabulation prepared for Alberta Transportation

2000 Alberta Originated For-Hire Trucking

Total: 39.28 million tonnes (mt)

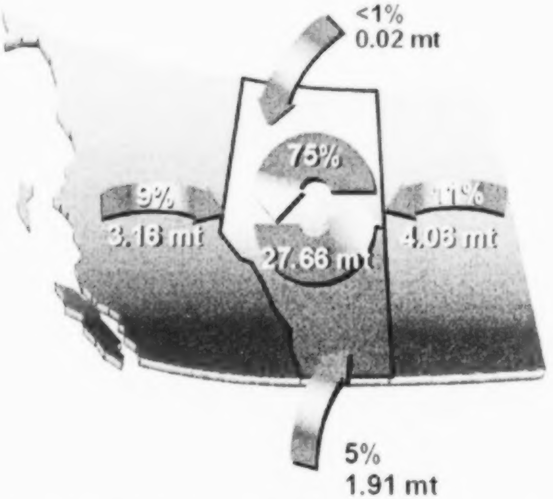

1%
0.23 mt
70%
27.66 mt
10%
4.05 mt
13%
5.22 mt
5%
2.12 mt

Source: Statistics Canada For-Hire Trucking Survey; Adapted by Alberta Transportation

For inbound cargo in 2000, the following diagram demonstrates the source of the 37 million tonnes of freight, and its intra-Alberta distribution – a 50% increase over 1995.

2000 Alberta Destined For-Hire Trucking

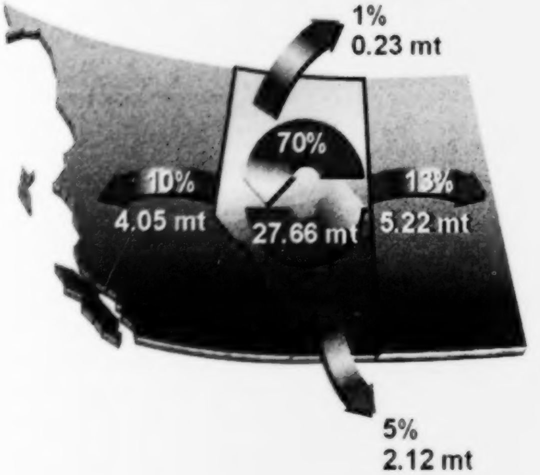
Total: 36.82 million tonnes (mt)


<1%
0.02 mt
75%
27.66 mt
9%
3.16 mt
11%
4.08 mt
5%
1.91 mt

Source: Statistics Canada For-Hire Trucking Survey; Adapted by Alberta Transportation

2000 Alberta Originated For-Hire Trucking

Total: 39.28 million tonnes (mt)


1%
0.23 mt
70%
10%
4.05 mt
27.66 mt
13%
5.22 mt
5%
2.12 mt

Source: Statistics Canada For-Hire Trucking Survey: Adapted by Alberta Transportation

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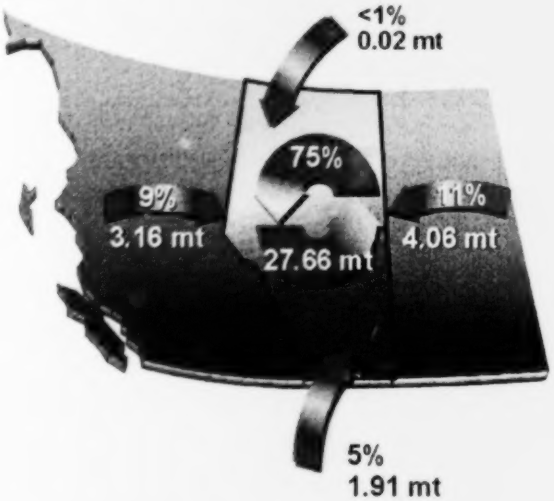
Total: 36.82 million tonnes (mt)

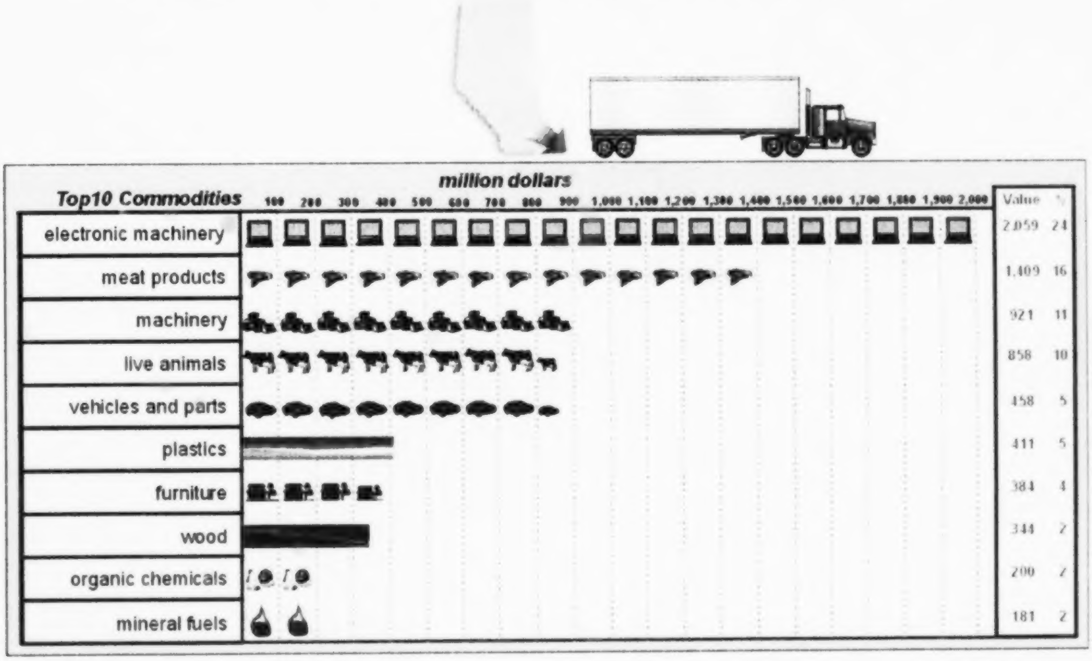

<1%
0.02 mt
75%
9%
3.16 mt
27.66 mt
11%
4.06 mt
5%
1.91 mt

Source: Statistics Canada For-Hire Trucking Survey: Adapted by Alberta Transportation

Exports

Alberta's export market is a prominent piece of our economic fabric: like Canada as a whole, we are more reliant on exports than most major nations, 5 times that of the U.S. The U.S. is the largest single consumer of our exports, and trucking is often the mode of choice for getting value-added goods to U.S. destinations.

2001 Top 10 Commodities Alberta Exports to the U.S. by Truck (ranked by value)



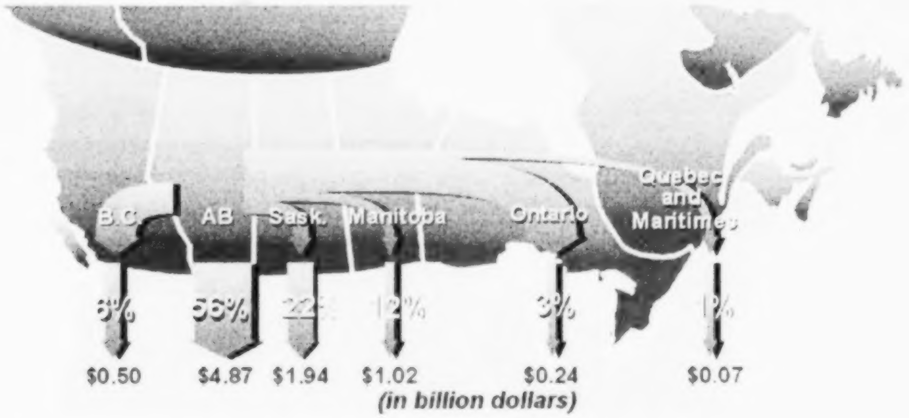
Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta Transportation

The above chart displays the top 10 commodities, in 2001 shipped by truck to the US, representing $8.7 billion of Alberta export products. From 1996-2001, Alberta's total North American truck exports grew in value by 97%, which exceeded the growth rate of any other non-pipeline transportation mode.

The value of Alberta's truck exports to Mexico jumped from $8.9 million in the year 1996 to $278.0 million in 2001 - a 3000% increase. This rise in demand was attributable to Alberta's meat and edible meat by-products, which, in the short term, will be adversely impacted by the BSE issue.

Alberta's exports, by truck travel on a number of different corridors and through a variety of geographic gateways before reaching their intended destination, as the following map indicates.

2001 Province of Gateways for Alberta Exports to the U.S. by Truck (value)

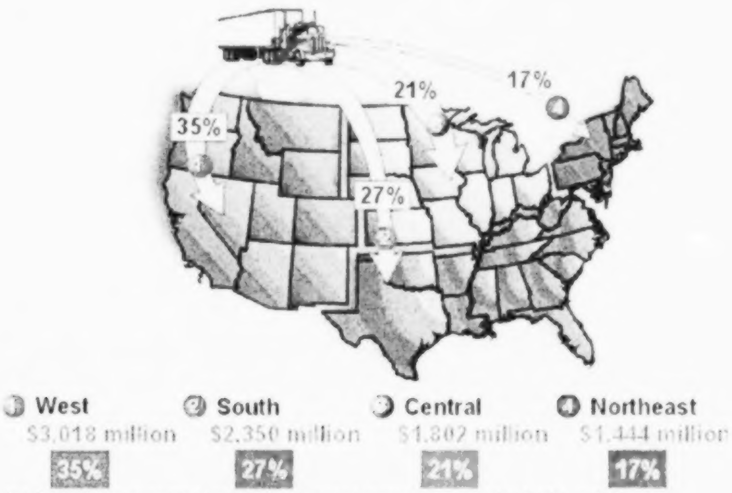

B.C.
AB
Sask.
Manitoba
Ontario
Quebec and Maritimes
6%
56%
22%
12%
3%
1%
$0.50
$4.87
$1.94
$1.02
$0.24
$0.07
(in billion dollars)

Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta Transportation

In value, 6% of the goods moved to the west of Alberta and 38% moved to the east before arriving in the U.S.. Fifty six percent of the value of Alberta goods traveled south directly.

The following chart demonstrates the US regions to which Alberta freight is trucked.

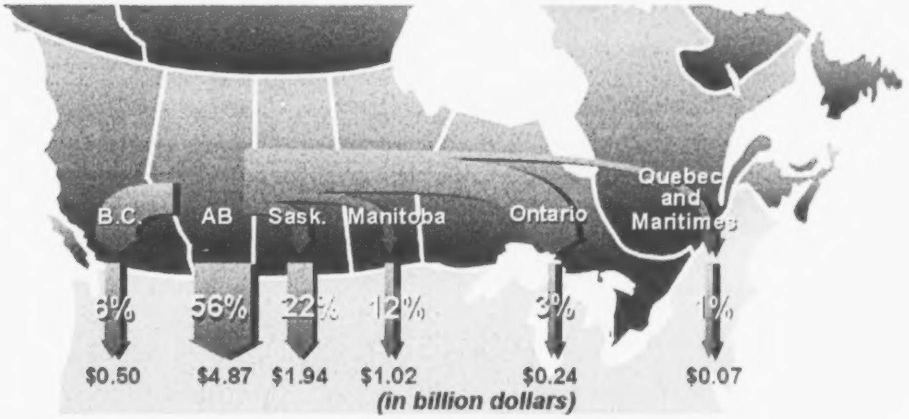
2001 Alberta Exports to the U.S. Regions by Truck (value)


35%
27%
21%
17%
West
$3,018 million
35%
South
$2,350 million
27%
Central
$1,802 million
21%
Northeast
$1,444 million
17%

*U.S. regions outside the 48 continental states account for $101 million, and 1% of total Alberta export value by truck.

Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta

2001 Province of Gateways for Alberta Exports to the U.S. by Truck (value)


B.C.
AB
Sask.
Manitoba
Ontario
Quebec and Maritimes
6%
56%
22%
12%
3%
1%
$0.50
$4.87
$1.94
$1.02
$0.24
$0.07
(in billion dollars)

Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta Transportation

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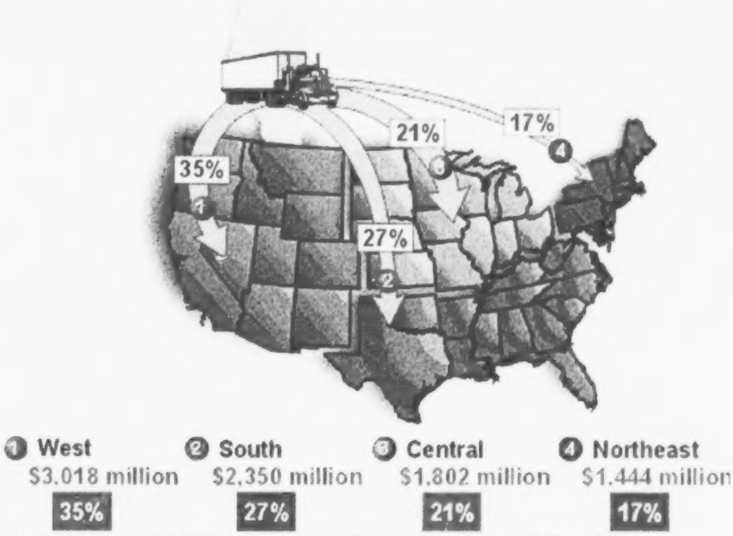

35%
21%
17%
27%
1
2
3
4
1 West
$3.018 million
35%
2 South
$2.350 million
27%
3 Central
$1.802 million
21%
4 Northeast
$1.444 million
17%

**U.S. regions outside the 48 continental states account for $101 million, and 1% of total Alberta export value by truck.*

Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta

Of the $8.7 billion of Alberta exports to the U.S. by truck, the western and southern U.S. states were the most important markets, $3.0 billion or 35% of the Province's truck exports went to the U.S. western region, where the CANAMEX Trade Corridor is located. Montana, Idaho, Utah, Nevada, and Arizona, all situated along this corridor, received $1.0 billion of Alberta goods by truck in 2001.

From 1996-2001, Alberta's truck exports to the western region increased by 49% in value. This region was Alberta's most consistent and reliable trading partner as it accounted for about 40% of the province's truck exports to the U.S. during that period.

Alberta exported 240% more in value in 2001 to the southeast region by truck when compared to the year 1996. Texas, on the Camino Real Trade Corridor, adjacent to the CANAMEX Corridor, accounted for $858.4 million of Alberta's truck exports in 2001. Moreover, the Alberta-Texas truck export relationship grew 130% between 1996-2001.

Imports

The following chart demonstrates the top ten commodities trucked into the province from the US in 2001, representing 73% of the total imports by value (63% by weight, a total of 1.3 million tonnes).

2001 Top 10 Commodities Alberta Imports from the U.S. by Truck (ranked by value)

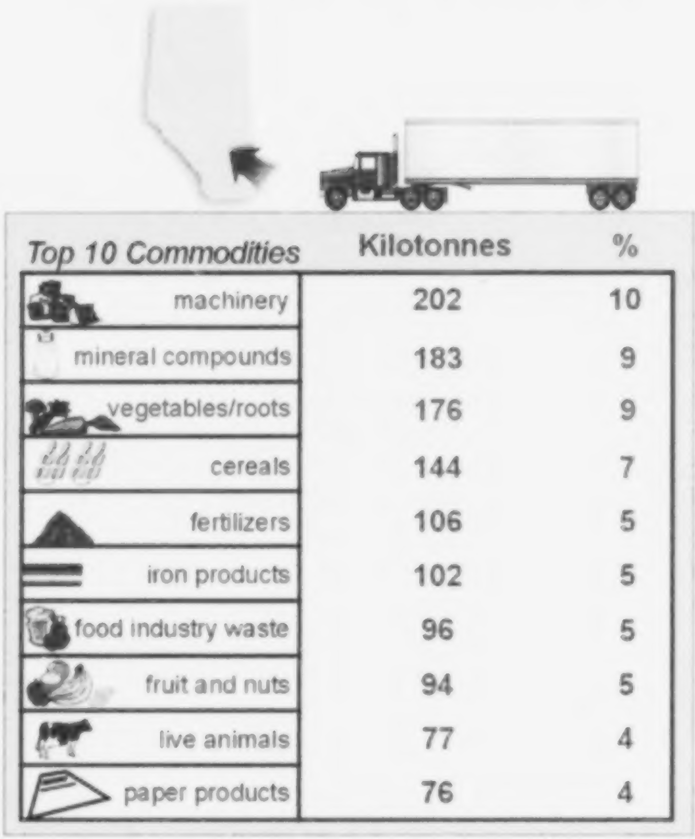
Top 10 Commodities	Million $	%
machinery	1,752	30
electronic machinery	695	12
vehicles/parts	388	7
iron products	280	5
photo/med. equip.	278	5
plastics	194	3
reserved for special use	157	3
vegetables/roots	155	3
misc. chemicals	152	3
live animals	144	2

Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta Transportation

The high value of machinery and electronics equipment reflects the current high level of investment in new oilsands projects, refineries and up-graders at Fort McMurray and the Fort Saskatchewan areas. These products point, perhaps, to the "value-added" manufacturing potential in the years ahead and represent opportunities available to Alberta-based companies.

A similar chart follows that describes the top 10 commodities imported into Alberta from the US - ranked by weight.

2001 Top 10 Commodities Alberta Imports from the U.S. by Truck (ranked by weight)



Top 10 Commodities	Kilotonnes	%
machinery	202	10
mineral compounds	183	9
vegetables/roots	176	9
cereals	144	7
fertilizers	106	5
iron products	102	5
food industry waste	96	5
fruit and nuts	94	5
live animals	77	4
paper products	76	4

Source: Statistics Canada: Canadian International Merchandise Trade: Adopted by Alberta Transportation

With reference to this figure, the most important commodities imported from the US by truck were machinery, mineral compounds and vegetables.

4.1 Motor Carrier: Current Issues

4.1.1 Infrastructure

The road infrastructure on which the trucking industry operates in Alberta is on balance, a good system and in fact, is better on average than many other Canadian jurisdictions[34]. However, a number of important considerations cast a different light on the situation:

- Much of the secondary road infrastructure was put in place during the 1985-1992 period and is reaching a critical point in its life span. Preservation capital investment is required to avoid safety problems, vehicle damage, and higher user operating costs – all the product of poor road maintenance.
- The longer highway maintenance is delayed, the higher the costs – for example, delaying maintenance by 5 years can increase the cost 5 fold[35]
- Urban road systems and many smaller rural roads are in need of investment and upgrading, either related to growth pressures[36] or years of maintenance neglect – to quote a recent TD Bank study "An eroding transportation system and congestion could soon lead to costs in the hundreds of millions of dollars in lost time and impeded trade flows"
- The Alberta components of the National Highway System (TransCanada 1 and 16) are critical to our economy yet remain underfunded.

These arguments are part of a foundation supporting the industry stakeholders' position that there is an "investment deficit" in transportation infrastructure. This is particular true with respect to key points in the system – regional corridors and transshipment points (major urban centres) – that have a major impact on supply chains critical to the value-added sectors of the economy. Specific infrastructure needs that were identified in stakeholder discussions are outlined in section 4.2.1.

The lack of infrastructure funding and its inconsistent delivery exacerbate the situation. The quantity of funding available is the responsibility of all levels of government; however, the federal government is responsible for one of the major funding controversies. The federal government collects more than $5 billion[37] annually in federal fuel taxes, yet returns only a very small proportion directly to the system from which it derives this tax revenue. For example, their recently announced establishment of a 10-year $2 billion transportation infrastructure investment fund is unimpressive considering the funds are to be spread around all provinces, and over ten years. In contrast, trucking's voice in Alberta, the Alberta Motor Transport Association (AMTA), is aware that the Alberta government is investing at least as much as it is collecting in Provincial fuel taxes, in highway maintenance and construction. In fact, Alberta collects $600 million from its nine cents/litre tax, and spends $1.1 billion to build and maintain roads. Further, the five cents a litre tax rebate to Calgary and Edmonton has been a welcome funding source in support of infrastructure maintenance and expansion.

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[34] Flakstad, N., (2002) Roadweary, Alberta Venture, December, 2002, pp. 67-70, Also confirmed by Rob Wiebe, Senior Director, Transportation, Loblaws Companies/Westfair foods.

[35] Alberta Transportation – "Future Highway Needs: A 10 Year View on Alberta's Transportation Needs.", http://www.trans.gov.ab.ca/Content/doctype523/production/pol288.htm, accessed Oct., 2003

[36] TD Bank, Financial Group (2003) The Calgary-Edmonton Corridor: Take Action Now To Ensure Tiger's Roar Doesn't Fade, TD Economics Special Report, Spring 2003

[37] Flakstad, N., (2002) Roadweary, Alberta Venture, December, 2002, pg 70

In addition, many feel that the Federal Government does not fully understand the problem, or the urgency with which it should be addressed. The explicit view of the current government is: "Federal fuel taxes are an instrument of fiscal, not transportation policy and are an important source of general revenue" [38].

In contrast, our biggest competitor and market, the U.S., has a history of large, dedicated federal transportation funding programs driven by system revenues like fuel taxes: for example, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The current Transportation Equity Act for the 21st Century (TEA21) program involves investing US$218 billion over a 6 year program, with emphasis on highways, bridges and transit. For Canada, the per capita equivalent of this type of funding program would be $3 billion per year. The Canadian Government is currently providing only $120 million per year of which Alberta receives $10 million per year.

The U.S. federal government returns approximately 90% of its road-related revenues to the American road system. As an example, Colorado received $280 million during their 1999 fiscal year from their federal government (approximately 35% of their total budget). In Canada, federal transfers to the provinces are by comparison, insignificant. A proportionate contribution towards Alberta's annual $1.1 billion transportation budget would be $385 million, considerably more than the current $10 million provided.

It is not only the amount of funding for infrastructure that is at issue, but the consistency in its delivery. Groups like the Consulting Engineers of Alberta (CEA) and the Alberta Roadbuilders and Heavy Construction Association (ARHCA) are used to having the funding tap turned on and off frequently but recent abrupt changes in funding commitments have led to considerable negative impacts on their sector[39] (for example see Flakstad). The Province has, in the past, had a policy of spending windfall resource revenues on a one-time basis rather than adopting strategies that would see predictable investments made over a longer period of time. Furthermore, as funding pressure from other sectors increases, transportation is often used as a budget release value. The unpredictable infrastructure funding means long-term business planning by both the infrastructure industry and municipalities is very difficult. The Province's recently-implemented sustainability fund program addresses this need and, if managed as designed, will go a long way toward stabilizing infrastructure investment.

It is not as simplistic as one sector arguing that their funding is more important than another – fixing potholes is not more important than health care. But, without an efficient and well supported road infrastructure, the prosperity which we all enjoy would be threatened [40]. In part, many argue that is a continual case of under appreciation. To that end, groups like the Van Horne Institute, Westac, ARHCA, Alberta Transportation and many others are launching the "Transportation Awareness Partnership" program whose mandate is to expand public awareness of transportation and increase understanding of its contributions to our economy.

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[38] Transport Canada (2003) StraightAhead: A Vision for Transportation in Canada, Transport Canada Report TP 14054, Ottawa, pg. 53

[39] Flakstad, N., (2002) Roadweary, Alberta Venture, December, 2002, pp. 67-71,

[40] Westac and Van Horne Institute, (1999), Moving Forward, A Guide on the Importance of Transportation in Canada, Westac and The Van Horne Institute, publishers, Calgary, Alberta

4.1.2 Government Regulations and Policy

Border Issues

The Canadian perspective on border crossing issues is from a trade orientation, however, in a post 9/11 world, the U.S. very much views border inspections and entry requirements as a matter of national security. There is little debate around the need for security, but the inconsistency in rules as they apply to shipments and/or carriers and complications of new programs are adding costs to trucking movements and contributing to delays[41]. These border congestion issues can likely be partially mitigated by joint industry/customs/immigration planning utilizing technologies like ITS (Intelligent Transportation Systems) and RFI (Radio Frequency Interface) to pass information to border points prior to arrival.

On November 20, 2003 the U.S. Department of Homeland Security released final rules, which will allow U.S. Customs and Border Protection to collect cargo information necessary to identify high-risk shipments which could threaten the safety and security of the United States. The timelines apply to both inbound and outbound shipments from the United States and include:

Inbound:

- Air & Courier – 4 hours prior to arrival in U.S., or "wheels up" from certain nearby areas
- Rail – 2 hours prior to arrival at U.S. port of entry
- Vessel – 24 hours prior to lading at foreign port
- Truck – Free And Secure Trade (FAST): 30 minutes prior to arrival in U.S.; non-FAST: 1 hour prior to arrival in the U.S.

Outbound:

- Air & Courier – 2 hours prior to scheduled departure from the U.S.
- Rail – 2 hours prior to the arrival of the train at the border
- Vessel – 24 hours prior to departure from U.S. port where cargo is laden
- Truck – 1 hour prior to the arrival of the truck at the border

Although a much bigger issue in Eastern Canada (Ontario has 7 – 8 million truck crossings/yr. -- Alberta has 300,000), current border crossing inspections and reporting procedures cause significant delays and increased costs to Alberta motor carriers. Given the growth in trade with the U.S. and the increasing reliance on trucking for moving the output of the value-added economy, the situation is likely to worsen. The Coutts-Sweetgrass crossing, although low in absolute ranking nationally (10th), has consistently had the largest annual percentage increases over the last six years, and recently being among the few to show positive increases in border crossings[42].

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[41] Sanchez, M. (2003) Chaos Reigns, Materials Management and Distribution, March 2003, pp. 23-25

Fuel Efficiency

Frequent and widely fluctuating fuel prices, a trucker's second largest cost center after wages, make it difficult for companies to maintain stable freight rates. Fuel cost adjustments are often simply tacked on to prevailing rates, to the dismay of the shippers.

Since 1990 the trucking industry has improved its fuel efficiency and thus reduced green house gases in relative terms. Recent changes in regulations in the USA have reversed this trend. Engine design changes mandated by the EPA have reduced emissions such as NOx and Particulate Matter, but with a reduction of fuel efficiency. Since the U.S. is not a Kyoto signatory, these engines will lessen air pollution but may not coincide with the CO_2 reduction Kyoto targets established in Canada.

Engine manufacturers are producing products to meet US regulations. Alternative technologies are not currently viable and the Canadian trucking industry only has the choice of purchasing engines that meet US standards. The uncertainty of the future impacts of Kyoto rising from the absence of future emission standards, exacerbates the problem.

4.1.3 Industry Operations

Inter-modal

Inter-modalism is the best combination of transportation options to ensure the consistent, timely and cost-effective delivery of goods. CN and CP have invested heavily in intermodal facilities in Calgary and Edmonton that have been a critical piece in the increasing importance of their warehousing and logistics sectors.

There is no doubt that containerization has revolutionized global logistics and trucking is one modal component in the container system – the last mile mode. Subsequently, length of haul is the key consideration in discussions around intermodalism and trucking. Intermodalism makes sense when the length of haul is beyond a threshold distance. Many in the trucking industry view intermodalism as another niche component in an already incredibly diverse industry[43].

The AMTA suggested that inter-modal transportation can result in up to 15% savings to shippers. They further contend that the shift from road to rail for containers and piggy-back trailers has the potential to increase much more. However, the challenges of going outside of traditional modal silos often contribute to opportunities not being fully realized.

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[42] Nix, F. (2002) Making the Best of It, Canadian Transportation and Logistics, April, 2002, pp19-21

[43] Mark, K. (2002) Intermodal Momentum, Materials, Management and Distribution, July/August, 2002, pp 23- 24

Insurance

Liability insurance policy premiums are increasing rapidly, a trend that has impacted all aspects of transportation insurance. In part, this is related to fiscal challenges within the insurance sector which have translated into rapidly increasing premiums. Within trucking, smaller carriers are more prone to an inability to handle these increases given that they already operate within very strict parameters financially. Some insurance companies (e.g. Zurich Life) have simply withdrawn from the trucking business segment and as a result, firms are banding together to "self-insure".

4.2 Motor Carrier: Future Prospects

4.2.1 Infrastructure

Funding Strategy for Alberta Roads

Many have argued that increases in funding for roads and stabilization of that funding is a key component in ensuring the longevity and utility of this essential infrastructure. In a more value-added economy, the road system and its users play a more important role and therefore, its vitality is central to competitive advantages. Pressure on the federal government for increased funding of road infrastructure via fuel taxes needs to be sustained.

The ARHCA and its members recommend the creation of a stabilization fund to ensure more predictable funding in both the short and long terms. A three-year rolling stabilization fund would marry nicely with Alberta Transportation's three-year business plan cycle policy (although they operate on a one-year budget). Municipalities, dependant on provincial funding grants, could plan accordingly. The recommended system could allow for spending reductions in any given year should it become obvious that the economy is declining over the longer term.

Action Item

- The Alberta Government continue to support and develop stabilized infrastructure funding and take the lead with other provinces in developing a joint proposal among First Ministers for a more equitable allocation of federal fuel taxes to the provinces.

Alternative Financing

The Alberta Government should consider private, public partnerships (P3's) for financing selected highway or bridge projects, after suitable risk and financial viability analysis. As an example, an AEDA Transportation Committee member suggested the new roads badly required north of the existing Suncor and Syncrude operations near Fort McMurray be built by oilsands project developers, and financed through a royalty tax credit regime. Many such precedents exist in the mining and oil and gas sectors, where such programs stimulated investment.

Many jurisdictions employ toll roads calculated in a variety of ways and used to finance infrastructure as well as manage system flows. These toll roads can be developed in a number of ways, including P3's and on the basis of bonds.

The creation of provincial or provincially backed municipal bonds programs should be pursued, with the support of the Federal Government. These bonds, with attractive tax features, are a popular fiscal tool in the US, and are used to underwrite the cost of new capital projects. Alberta's existing impressive credit rating would ensure low financing costs, and would have the effect, if offered within Alberta alone, to keep Albertan's investment dollars working within Alberta.

Action Item:

- The transportation industry support the vigorous pursuit of new and innovative financing mechanisms including P3 partnerships, provincially-backed bond issues with attractive tax incentives to investors, and royalty credit mechanisms to resource companies in exchange for their direct funding of highway links to their projects.

Alberta's Highway Needs

Alberta Transportation estimates that the next ten years will require a relatively flat annual investment of $1.1 billion[44]. This expenditure will cover the combined needs for maintenance of the existing network, capital improvements and the Municipal Transportation Grants.

Regarding the highway system and future improvements, the AMTA, for example, is not as concerned about the general capacity question (outside of urban areas and specific corridors) as the safety issues. They advocate the need for more rest areas with separation from the highway, spaced efficiently at 125 km +/- apart. Such improvements would assist in managing driver fatigue, always a significant concern for fleet managers.

The AMTA, ARHCA, and trucking companies interviewed would also promote:

- the addition of more passing lanes
- longer sight distances
- widening of shoulders
- more grade separations
- improved signage
- enforcement of speed and traffic laws

Stakeholders were vocal in expressing needed road capacity expansions in a number of key areas. A number of suggestions have a distinct regional focus but the majority relate to the more obvious highway capacity expansions required to promote economic growth in Alberta, in particular, as it relates to moving goods in a "seamless" fashion to/from our trading partners.

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[44] Ibid Footnote 35

The full "twinning" of the Trans Canada Highway No. 1 from Regina to Vancouver and the Yellowhead Highway from Saskatoon to Vancouver are among the improvements seen as important to public safety and economic growth. These are key links on the "National Highway System" and for many stakeholders, their current status is unacceptable. Canada is the only G-7 nation without a national highway program[45].

The City of Medicine Hat, makes a strong economic case, based on a recently commissioned Van Horne study, to twin Highway 3 through Lethbridge to the BC border. This would link the City and other Southern Alberta communities to the CANAMEX trade route, and provide another major east-west highway to potentially relieve traffic stress on the TransCanada Highway 1 through the City of Calgary. The widening of the Edmonton – Calgary Highway 2 corridor, has been suggested by stakeholders, considering that it facilitates one of the fastest growing economic regions in North America . New routes such as a link between Fort McMurray and Peace Country should be considered, as well as extending Hwy 63 to Fort Chipewyan.

The City of Red Deer and local businesses are promoting a new look at the Howse Pass route, completing a new major east-west link extending from Red Deer via Highway 11, Icefields Parkway, Howse Pass link connecting with the TransCanada Hwy number 1 just north of Golden, BC. Savings of up to 15% are suggested for shipping costs to Vancouver for Red Deer north traffic, while relieving existing congestion on the TCH No. 1 and lessening environmental concerns associated with further National Park highway expansion.

Investment Safety Benefits

Adequate capital investment in road rehabilitation and upgrades results in the following safety improvements[46], after post construction comparisons are made by provincial traffic officials on accident data:

- Pave highway – reduced collision rate of 29%
- Add/widen shoulders – reduced collision rate of 42%
- Add interchange – reduced collision rate of 44%
- Twin Highway – reduced collision rate of 47%

These expenditures result in lower health care, insurance, and social costs and less human trauma.

Action Item:

> Alberta Transportation work with the municipalities, regional economic development agencies and industry representatives in expanding its joint monitoring and planning programs, including the setting of investment and road rehabilitation priorities. Focus should be on key roads connecting Alberta's economic regions and facilitating access to export markets.

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[45] Source: Alberta Transportation
[46] Ibid Footnote 35

4.2.2 Government Regulations and Policy

Vehicle Size & Weights

The trucking industry requires a national standard for vehicle size and weights across Canada and other north-south major trade routes, including the entire CANAMEX corridor. The Western Canadian TAC standard of 62,500 kg maximum gross vehicle weight (GVW), within 25m overall length on 8 axles should become the standard for all jurisdictions.

Long Combination Vehicles (LCV's)

Alberta and other Government regulators should consider permitting the expanded use of LCV's, including "Turnpike Doubles" (2 x 12.2-16.2m trailers; 37 m overall); "Rocky Mountain Doubles" (1 x 12.2-16.2m trailer/1 shorter to meet 31 m overall) and "triples" (3 trailers not exceeding 35 m overall). Further, working towards having their use approved in neighbouring jurisdictions would be a considerable benefit to operations based in Alberta and serving western North American markets, essentially increasing our current locational advantage.

Action Item:

- In conjunction with joint planning of future highway capital and preservation investment priorities, broaden the network of highway links permitting LCV traffic.

US Border Crossings

The industry recommends Alberta Government officials continue to work closely with US and Canadian Customs policy makers to:

- Separate truck and passenger vehicles
- Provide fast lanes for trucks at border crossings and appoint specially trained officers
- Employ ITS and new information processing technology such as Radio Frequency Interface (RFI) to load truck computers with customs clearance data that would be recognized by customs officers at the border crossing.

The industry is encouraged that the Free and Secure Trade (FAST) program for low-risk carriers and PreArrival Reporting System (PARS) are scheduled to be implemented this fall.

Action Item:

- Step up joint industry/customs/immigration planning towards eliminating unreasonable border congestion utilizing the potential of ITS (Intelligent Transportation Systems) and RFI (Radio Frequency Interface), to pass information to border points prior to arrival.

Security Inspections

The industry recommends joint US/Canada jurisdictional efforts to:

- Eliminate harassment of out-of-province plated carriers
- Apply ITS technology to expedite weigh scale and safety inspections by transmitting load contents, axle loads, driver and company profiles to the station upon approach. The scale operator would signal the driver to either proceed or signal to stop for an inspection.
- Develop consistency amongst jurisdictions in the application of inspection methods and weigh scale procedures.

4.2.3 Industry Operations

Inter-modal

Inter-modal transportation is increasing. The abundance of empty containers west-bound from Chicago and Eastern Canada distribution bases, to be returned to Asian shipping points, represents a big opportunity for Alberta companies to develop markets in Asia for their products featuring attractive "back-haul" shipping rates. Similarly, back-haul shipments of value-added products from rural regions could reduce costs for outbound shipments from Calgary and Edmonton distribution centres.

Future Inter-modal Shifts

AMTA predicts the current long distance trucking operation's shift to inter-modal rail service will "max" out at 15% of the current long-haul trucking market. One trans-continental general freight motor carrier felt a larger percentage shift will occur as the railways and truckers gain familiarity with the shipper's (and their customers) service needs, and logistical requirements. AMTA, however, feels JIT supply schedules and tight distribution service requirements will attain an ultimate balance still favouring full truck shipments.

Kyoto Emissions

Responsible trucking companies and their association (AMTA) have recommended to provincial authorities a reduction of the speed limit to 100 kph. This would reduce fuel consumption up to 10%, depending on type of service, on Alberta highways and lessen truck emissions by proportional levels.

The Alberta Government, in cooperation with the appropriate federal authorities, should consider R&D initiatives and investigate funding options for the development of "made in Canada" truck and bus motor designs. Such innovations as hydrogen-assist systems for diesel engines have yielded bench and selected field test results indicating fuel consumption reductions of up to 50%. These initiatives would mitigate the current problem confronting the industry of being captive to US-produced engines that meet US emission specs, but exacerbate the problem and challenge to meet Kyoto targets.

For example, in the United States, new 2003 Caterpillar on-highway truck engines have been fitted with the company's new "ACERT" technology that they claim meets U.S Government emission standards better than other manufacturers. In addition, their new engines provide fuel consumption levels three to five percent better than competing models, and equal to their 2001 models. Ironically, to reduce particulate emissions, one of the several features of ACERT technology is an exhaust after-treatment process involving a catalyst that chemically converts hydrocarbons to carbon dioxide and water, increasing the difficulty in meeting Kyoto CO_2 reduction targets in Canada.

ITS (Intelligent Transportation Systems)

Many future productivity advances will involve the application of advanced integrated information processing computers, high capacity communications networks, new technologies and management strategies, leading the way to improved operational safety, capacity and efficiencies in the transportation system. Progressively, these systems are being integrated with their shipper and customer's networks so that each shipment can be measured for logistics performance.

RFI (Radio Frequency Interface)

Productivity advances in the future will also see RFI devices download information from on-board truck computers for a wide variety of operational control systems and inspection procedures. Such things as driver and engine performance, fuel and lubricant quality, safety features in brake systems, etc., will be monitored and measured at the will of management.

The same technology can be used to transmit load contents, axle weight distribution, driver profile, and corporate data from a truck-mounted smart chip to weigh scale operators and/or safety inspection officers to save time and expense in moving freight to markets.

Equipment

Turnpike doubles, if and when approved on additional routes in the primary highway network, would allow motor carriers to achieve higher levels of productivity. It would also position them better for the inevitable integration into the inter-modal rail system as two forty foot containers (if within permissible weight limits) can be carried by a single tractor.

Insurance Costs

AMTA is investigating the concept of a "Reciprocal Insurance Policy" which would provide smaller carriers with coverage for the self-insured portion of an accident claim. The Superintendent of Insurance has been approached with the idea and apparently is supportive.

Action Items:

- The AMTA should open a dialogue with the Alberta Government as a means of supporting the AMTA self-insurance initiative for small truck and bus companies.
- The AMTA and the trucking industry will support the province in the implementation and enforcement of a 100 km/hr speed limit for heavy commercial trucks. The province should support this initiative as a means of mitigating the insurance premium issue.

4.3 The Bus Industry

4.3.1 Current Issues

The System

The bus industry in Canada is generally considered to consist of: inter-city bus services, school bus service, urban transit service, and charter services. In addition to passengers, bus parcel express is a significant market for inter-city carriers.

Motor Coach Canada, Inc. (MCC), the main spokesman for the industry, reports that the industry provides scheduled services to 3000 communities (rail services less than 500), using 3000 buses providing up to 60 million passenger-trips (VIA moves 4 million), through 295 companies employing some 15,000 people. MCC further states that each bus contributes $7-10,000 per day, per coach, to the economy and directly supports a total of 169,000 jobs in the country in all its functions.

Inter-city busing in Alberta is dominated by Greyhound Lines of Canada, a company that is servicing demand for the population segment not traveling by air or passenger vehicles. Greyhound Canada's parent, Laidlaw Inc., provides inter-city bus services in most of the rest of Canada through subsidiaries such as Grey Goose, Voyageur Colonial, and other firms including Greyhound. The Laidlaw family of companies is estimated to account for 45% of all scheduled bus ridership in Canada.

Other Alberta companies such as Pacific Western Transportation, Brewster, and Accent Lines offer niche services such as inter-city express links (e.g., Red Arrow), tours, charters, and transit services. The other major component of the industry is the school bus system, which is virtually 100% privately operated on (generally) long-term contracts.

Inter-city bus scheduled ridership declined from 46 million riders in 1970 to 14 million in 2001, according to the December 2002 Report of the Standing Senate Committee on Transport and Communications[47]. Reasons include: rising income and car ownership; urbanization; the expansion of urban transit systems to surrounding areas; and an out-dated government regulation system.

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[47] Report of the Standing Senate Committee on Transport and Communications – Intercity Bus Service in Canada."

Buses provide the safest transportation according to Transport Canada and the US Department of Transportation. MCC points out how directly this meets the first of the eight guiding principles of the federal government's *Straight Ahead* policy statement: "highest practicable safety and security of life."

Due to their dominance in the industry, it is important to note that the Laidlaw/Greyhound family in North America is currently financially challenged, as evidenced by public news releases in recent months. While the U.S. Company seems to be in the worst shape, Greyhound Canada has commenced rationalizing its operations and adopting strategies designed to increase cash flow. 2003 results to date indicate reduced passenger usage, and increased operating costs. No capital spending on new equipment is planned for 2004, and low-density routes will see cuts in frequency. To the extent that Laidlaw does start withdrawing certain low density inter-city service links, the current (fragmented) provincial economic regulation of the industry across the country may soon be challenged.

The private bus industry also provides specialized services such as shuttles and limousine service in urban centers for accessing airports, city centers and major employment sites (e.g., oilsands plants).

Industry Image

Bus operators work hard at elevating the perceived role and image of the industry, but readily admit that despite advertising and promotion efforts, the public still views bus as the "mode of last resort." The industry also feels that "governments" give them little status or modal recognition, but at the same time admit they could do a better job in assembling reliable performance statistics.

Motor Coach Canada recently presented a paper to the Deputy Minister of Transport for Canada,[48] designed to create a better awareness of the contribution of inter-city bus service to the passenger transportation industry in Canada.

Operating Cost Issues

The current operating issues identified above for motor carrier operations are (generally) the same problems confronting bus companies, i.e.:

- difficulty in recruiting and keeping properly trained drivers
- rising fuel costs
- rising insurance premiums (particularly since 9/11. Some insurance companies are insisting on up to $200,000 deductible on personal injury coverage).

One operator expressed rising legal costs in the bus industry as an increasing concern. In part, this is driven by passengers who are becoming increasingly more litigious.

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[48] Presentation to Deputy Minister of Transport "The Inter-city Motor Coach Industry in Canada" – June 26, 2003

MCC also takes issue with the extent and nature of the heavy subsidization of VIA Rail and the transit monopolies, while the bus industry provides competitive services using fare levels set to recover its full cost of operation.

Regulations & Policy

The provinces administer the rules governing the economic regulation of the bus industry in Canada. There is concern over the absence of consistency across the country in the control of entry and fares. Over the last 15 years, controls have varied from strict, through relaxed, to being eliminated altogether.[49]

The December, 2002 Senate Report on Inter-city Bus Service in Canada pointed out that even in heavily regulated (entry and rates) provinces the industry has experienced abandonment of service in rural areas and in low-density markets. This problem could be exacerbated if the Laidlaw companies withdraw service to these areas due to the rationalization of their operations.

The Alberta Motor Transport Board looks for evidence of commercial viability and interprets the application's "fairness" to the existing service provider, and hears evidence on the economic impacts to the operator. Generally speaking, these cases target only the runs that are profitable to the existing carriers, such as Greyhound.

While the bus industry generally applauded the recently announced transportation policy statement *"Straight Ahead – A Vision for Transportation in Canada"* it had the following comments on the document:

- failed to recognize the role and significance of Canada's motor coach industry
- allocated less than one page (of 84 pages) to bus, that transports 33% of all Canada's scheduled inter-city passenger traffic
- contradicted some of the recommendations of the July 2001 Canada Transportation Act Review Panel regarding VIA Rail subsidization

4.3.2 Future Prospects

The opportunities outlined in the corresponding motor carrier "Future Prospects" and "Human Resources" sections in this report equally apply to the bus industry.
Specifically, new driver training initiatives and improvement of working conditions will tend to attract younger people to the industry.

Perhaps the most prominent issue facing the industry in the eyes of the MCC is the absence of a national passenger strategy and/or vision – to define the role of inter-city busing and its relationship to the national transportation system.

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[49] Ibid footnote 47

Action Item:

- The bus industry, using all available means, should intensify its campaign to achieve a more prominent position in a national passenger transportation strategy. The initiative should enunciate a better balance in passenger subsidy programs, particularly for poorly-served rural areas; enhanced competition through relaxed and evenly administered regulatory practices; and programs to create greater public awareness of the advantages of motor coach travel.

Buses should be considered in the future as an integral part of the feeder system to major airports. In time, they should have the ability to write "through" tickets including air links, to any destination from smaller centers. The industry, directly and through its associations, seeks a more prominent role for bus in a balanced national integrated multi-modal passenger transportation system. Indeed, Canada's motor coach industry would point out the inherent flexibility of the bus mode to coordinate services with rail, marine, automobile and air modes for seamless transportation services.

4.4 Warehousing and Logistics

4.4.1 Current Issues

This segment of the transportation industry has grown in prominence as manufacturing, retailing and other value-added sectors have adopted practices like just-in-time production and quick response retailing. Gone are the days of lengthy storage of high volumes of goods and products as the transportation system itself has becoming the "rolling inventory" carrier. Consequently, many of the issues facing the various modes that are outlined in this study directly impact this sector. There are however a number of key current issues they face.

- Warehousing operations are located mainly in our major cities and therefore share the challenges of urban congestion. More creative mechanisms to finance required urban infrastructure capacity expansions should be identified.
- In addition to road congestion, the provision of transit services is a key issue. Currently, transit services often do not extend into more industrial locations, yet many of their employees lack access to other alternatives and firms have taken to providing their own bus services.
- Finding and maintaining skilled and semi-skilled workers is another major challenge, not only for distribution centres but for the transportation firms they work with. Developing their workforce and raising it as a viable career opportunity is a top priority.
- Developing back-haul opportunities is a key operational concern. Many distribution centres send shipments into more rural parts of Alberta and Western Canada but struggle to find return or back-haul moves.

4.4.2 Future Prospects

The current locational advantage enjoyed by Edmonton and Calgary as points for providing logistics and distribution services to Western Canada and indeed, North America are slowly being eroded, in part by our success. Consequently, there is an urgent need to address the concerns outlined above.

- Forward planning for warehousing and other industrial land uses should include transportation rationalization and traffic analysis, to avoid future urban traffic congestion or exacerbating existing problem areas.
- Congestion will not disappear, but efforts should be made to ensure that local access to major routes and intermodal facilities within Calgary and Edmonton is given the priority this sector feels it deserves – the funding for ring-roads is welcome but they are not an infrastructure panacea. The recent announcement in Calgary by the Alberta Minister of Transportation that a public/private funding arrangement is being carefully examined to underwrite the $250 million capital cost of the Stoney Trail ring-road, is encouraging.
- As this sector grows and identifiable clusters of activity develop, transit services can hopefully be developed as well, which would be a huge boost to attracting a workforce
- The efforts to increase the pool of qualified labour for this sector as outlined in the human resources education section of this report are badly needed as the demand for labour increases and looming demographic transitions evolve
- Alberta's permitting the use of 53 foot containers, is a huge advantage to distributors. Extended use of this equipment and long combination vehicles LCV's on Alberta highways will enhance distribution productivity. This is particularly true as value-added production increases outside of our major centres.

Warehousing and logistics is a rapidly growing sector in Alberta, largely owing to a positive business environment and the province's central geographic location. However, future growth in this sector could be seriously impaired by a shortage of suitably skilled workers and increasingly congested road networks in and around our major urban centres.

Action Item:

- A high priority be assigned to the completion of ring-roads around Calgary and Edmonton as a means of facilitating truck movements to, from and within Alberta's major urban centres.
- A high priority be assigned to the development and maintenance of internal road systems for accessing industrial areas in major urban centres that are commensurate with the needs of a growing warehousing and logistics sector.
- Alberta's secondary and post-secondary teaching institutions be encouraged to develop and expand programs for graduating students with the kind of skills required by Alberta's growing warehousing and logistics sector.

Chapter 5

5 Rail Transport

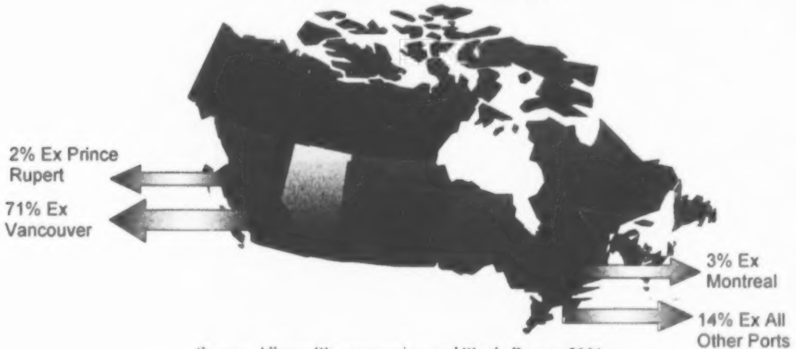
This assessment identifies current challenges to rail carriers and shippers in Alberta; and, over a ten year planning horizon, projects the prospects for both public and private sector stakeholders in the rail mode. This is primarily a qualitative outlook on changes taking place in the rail/intermodal transportation sector based on an extensive series of interviews conducted with industry stakeholders (Appendix B).

It is noteworthy that the Alberta rail network also serves in a passenger context, which is minor in terms of overall traffic volumes. VIA Rail operates its transcontinental service through Edmonton and Jasper and its Skeena service between Jasper and Prince Rupert. Rocky Mountaineer Railtours operates a seasonal daylight service between Calgary and Vancouver and between Jasper and Vancouver. As well, Canadian Pacific Railway operates a seasonal, overnight tour train, on a circle route from Calgary through southwestern Alberta and southeastern B.C.

5.0 System Context

Of a total 28 million tonnes of exports moved from Alberta by rail, 18.4 million tonnes is international traffic positioned for overseas export at Vancouver, Prince Rupert, Montreal, Halifax and other smaller ports. Its distribution is explained in the figure below.

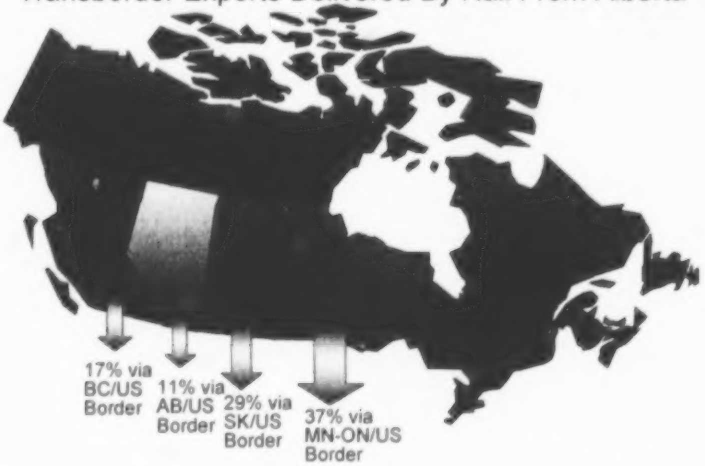
Overseas Export Positioning by Rail From Alberta
(18.4 Million Tonnes in 2001)



Source: Alberta Transportation and Trade Report 2001: Statistics Canada Trade Merchandise database

The 10 million tonne balance of exports moved (illustrated in the next figure) by rail from Alberta is transborder traffic to the United States and Mexico. Most Alberta transborder rail traffic diverts south to the U.S. from the eastbound Canadian transcontinental mainlines at either Moose Jaw, Saskatchewan (CPR) or Winnipeg, Manitoba (CN).

Transborder Exports Delivered By Rail From Alberta


17% via BC/US Border
11% via AB/US Border
29% via SK/US Border
37% via MN-ON/US Border

Source: Alberta Transportation and Trade Report 2001

Asian intermodal container traffic is having a significant impact on Alberta as these containers pass through the province along international trade corridors between West Coast ports and Eastern Canada/Midwest U.S. markets. Of over 1.5 million twenty foot equivalent container units (TEUs) currently handled at the Port of Vancouver, it is estimated that at least 50% move through Alberta.

Asia Import Container Flows By Rail Through Alberta

1.5 Million TEU's Handled at Vancouver

Source: Port of Vancouver Statistics

Dramatically increasing volumes of high value Asian imports to North America have driven up eastbound rail traffic. Ocean carriers are seeking to balance rail flows with incentive rates for westbound containers that otherwise would return empty. As a result, marine lines are willing to load lower value Alberta exports to Asia at backhaul rates in containers returning empty from the east. This is an important, if perhaps transient, advantage for Alberta export development which will last as long as marine container lines seek to keep ships loaded in both directions at Vancouver. Delay of full rated eastbound traffic in Asia for lack of containers held for loading marginal revenue westbound traffic in Alberta, may cause marine carriers to either raise westbound rates or expedite the return of empty westbound containers to ports.

5.1 Rail / Intermodal: Current Issues

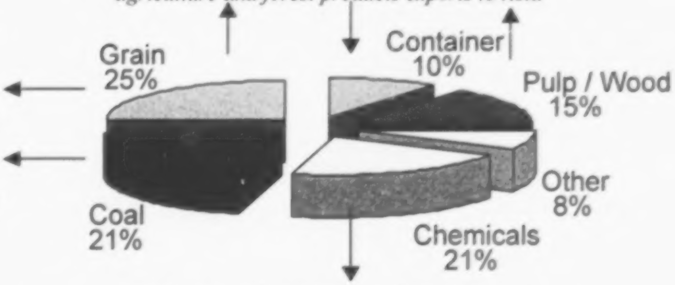
The conventional role of railways in Alberta, providing multi-car and trainload commodity transportation to bulk and break/bulk West Coast marine terminals for resource exports, is changing. Dramatic growth of intermodal container transportation is setting the infrastructure investment agenda in face of flat or declining demand for traditional bulk transportation.

The rail market transition underway in Alberta is firmly focused on intermodal as well as forest products and chemicals traffic growth. Even though coal and grain comprised close to half of Alberta's originating traffic in 2001, coal is now in sustained decline and diversion to containerized shipments for specialty agriculture products is anticipated to curtail conventional hopper car movement of primary agricultural goods.

Although intermodal is still a relatively small segment of rail traffic (10%), it has grown by almost 50% since 1995 and is projected to continue dramatic growth. However, within low to no growth export demand for primary agricultural products and increasing export demand for forest products, shippers are shifting to container transportation - for reasons related directly or indirectly to value-added production.

Alberta Rail Traffic : Current Composition and Ongoing Changes
(Approximate Weight Based Traffic Composition in 2001)

Marine container backhauls will increasingly attract agriculture and forest products exports to Asia



Diversion of Grain to Containers And decline of Coal Exports Will reduce Bulk unit train

Market dynamics will increasingly shift Chemical export traffic growth from offshore to transborder

Source: PROLOG Canada Inc.

The balance of this chapter provides an assessment of current rail/intermodal challenges in the context of a static bulk commodity market, rising intermodal container demand and ongoing industry adjustments.

5.1.1 Infrastructure: *Railway Rationalization*

Railway Restructuring

The two Canadian transcontinental railways have achieved impressive productivity improvements with rationalized and restructured operations (e.g., less track, fewer employees, consolidated terminals and shortline transfers). While the results have significantly increased the overall competitive position of Canadian National and Canadian Pacific Railway from a profitability perspective, some regional constraints have been imposed on the Alberta market for rail freight shippers.

Transfer of the former Alberta Resources Railway and Northern Alberta Railway network to shortline operators allowed the transcontinental railways to retain the connecting traffic, still setting rates with shortline shippers, but not incurring the shortline costs. However, shortline operators do not have the internal financing capability of the Class 1 carriers for infrastructure improvements to extend heavy haul corridors and intermodal container capability beyond the transcontinental mainlines.

According to the Railway Association of Canada, much of Northern Alberta is now served by shortline operations which require track rehabilitation and bridge upgrades to accommodate the new transcontinental standard of 286,000 pounds weight-on-rail for more economical, heavy loading railcars. This constrains the market competitiveness of Northern Alberta shippers who must load cars lighter or incur higher cost trucking to reach rail reload facilities on the transcontinental mainlines. It also constrains the extension of heavy haul rail alternatives to parallel highways for logistics support of Alberta oil sands projects, Arctic gas pipelines and other northern resource developments.

Similarly, the competitiveness of specialty agri-foods and forest products requiring export marine containers is constrained by an intermodal rail system which requires relatively long haul trucking from Northern Alberta to reach centralized hub terminals in Calgary and Edmonton.

Remote intermodal transfer facilities have been closed to improve container-handling productivity with consolidated terminals. However, the emerging concept of containerizing crops at the farm gate presents a new intermodal market opportunity that is pre-maturely constrained by the latest round of rail service and terminal rationalization in Alberta.

In Saskatchewan, Canadian National is re-evaluating rail access for the crop containerization market and has taken a step back toward outlying intermodal transfer facilities. In a pilot project partnership with Marine Container Services of Montreal, CN is providing service to a satellite agricultural products container terminal at Moose Jaw with connecting rail car shuttle to the CN Intermodal Hub at Saskatoon. As CN readily points out though, this is a market anomaly with CN able to reach into CP territory over its own tracks, and that anomaly is not paralleled in Northern Alberta.

In Northern Alberta, the Class 1 railways may not see the need to invest in regional shortline railway upgrading or intermodal facilities because they can capture much of the traffic at truck-to-rail reload facilities or hub container terminals on their transcontinental mainlines. The Class 1 railways can remain relatively indifferent as to whether connecting traffic is received from regional truck hauls or shortline railways.

Class 1 railways would only consider funding for shortline infrastructure investments – if those investments could show an attractive return from significant *new* traffic attracted to the transcontinental mainlines. Proposed extension of the Athabasca Northern Railway beyond Fort McMurray to directly access Alberta oil sands development may be a case in point.

Railway Consolidation

North American railway infrastructure integration is ongoing with mergers, acquisitions and alliances. Through this process, Canadian National and Canadian Pacific Railway have extended operations into the Chicago/Midwest and Eastern U.S. market, becoming as much American as Canadian railways.

Canadian Pacific Railway previously integrated Soo Line operations and acquired the Delaware and Hudson to obtain Chicago and New York access and more recently has increased U.S. access under a market alliance with Union Pacific Railroad.

Canadian National has absorbed the Wisconsin Central and Illinois Central to obtain direct access to Mid-America and the Gulf of Mexico while a proposed merger with the Burlington Northern Santa Fe Railroad was placed in abeyance. Both Canadian National and Canadian Pacific Railway (as well as BNSF and OmniTRAX) proposed to acquire British Columbia Railway operations extending from the Dawson Creek gateway to Northern Alberta. On November 25th, 2003, the Government of British Columbia announced that Canadian National will take over the operations of BCRail[50].

These mergers, acquisitions and alliances provide single carrier service to more destinations; but they also limit Alberta shippers' access to competitive rail gateways. Undoubtedly with the continued momentum of North American infrastructure integration, Alberta might realize the most efficient rail system from consolidation of essentially parallel Canadian National and Canadian Pacific routes through Western Canada (as much from the flexibility to reassign traffic to the most efficient route as from further rail line abandonments). However, for the large rail dependent shippers in the province, without intra-modal competition, there is no guarantee that productivity gains would pass through to lower rates.

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[50] Calgary Herald, Wednesday, November 26th, 2003 page E4

5.1.2 Public Policy Issues: *Rail Industry Challenges*

Industry restructuring - by railways and shippers - is challenging traditional perceptions of the rail mode and creating new public policy challenges both within and beyond Alberta's borders.

Key challenges posed by current infrastructure capacity constraints in Alberta and beyond include:

- Extending lower cost rail based container service into rural Alberta beyond Edmonton and Calgary hubs and extending heavy haul rail corridors to accommodate northern Alberta development projects.
- Expanding container capacity at B.C. ports for anticipated influx of imports from China accompanied by new liner services that might otherwise go to more distant U.S. ports.
- Maintaining marine terminal capacity for pulp and dimensional lumber traffic still using break bulk shipping or that may revert if westbound export container demand and rates surge.

Key Challenges posed by current carrier adjustments and shifting supply of rail/intermodal services include:

- Marine carriers wanting faster turn around on high rated import containers from China potentially reducing container availability and/or increasing backhaul rates that currently advantage Alberta
- Shortlining of the former Alberta Resources and Northern Alberta Railway network impairing access to capital required for long term infrastructure renewal.
- Railway Mergers, Acquisitions and Alliances curtailing competitive options for rail dependent Alberta shippers. (e.g., BCR may be acquired by CN within one year, CN and CPR may merge together or with others within ten years).

Key challenges posed by current shipper adjustments and shifting demand for rail services include:

- A permanent decline in Alberta coal exports shifting unit trains from long to short hauls.
- Forest products heavy haul rail demand increasing to achieve lower costs in U.S. markets.
- Forest and agriculture products container demand increasing to obtain backhaul rates to Asia.
- Identity preservation and segregation of genetically modified organisms (GMO's) pulling some specialty agriculture products out of the conventional grain transport system.

5.1.3 Industry Operations - *Commodity Transport Adjustments*

Bulk commodity transportation by rail still moves most of Alberta's resources to export position. The Alberta commodity sector is dependent upon bulk rail transportation for both transborder exports and offshore export positioning. However, the Alberta commodity sector is restructuring to reduce costs, add value and access sustainable markets. Current restructuring by railway shippers that has changed the nature of railway operations includes the following.

Grain

The Canadian Grain Handling and Transportation System is being dramatically rationalized within ongoing regulatory reforms that in turn are driving grain company consolidation. Transition to a more commercial system of incentive, cost-based, trainload rates (versus regulated, distance-based, carload rates) has motivated grain company consolidation to achieve the highest possible throughput thresholds to obtain the lowest possible rail rates.

High Throughput Elevators that can load full trainloads are the result of consolidating smaller country elevators as well as merging major grain company operations[51]. Over the next ten years this transition is anticipated to reinforce demand for high-volume bulk grain transportation.

However, Alberta Agriculture reports that bulk transport demand may be diminished as the agri-food industry diversifies further up the value chain. High volume bulk rail transport out of the province will not be required for grains diverted to the Alberta livestock market or for local processing into higher value food products. As well continuing crop shift to specialty products requiring identity preservation and segregation from genetically modified grains may militate against use of the traditional bulk transportation system. The higher-value transportation choice is the container/truckload lot which reportedly could divert up to 30% of current elevator system volume[52].

Forest Products

The softwood lumber dispute with the United States is driving industry restructuring in Canada. Ironically, the imposition of tariffs, rather than reducing, has actually increased transborder exports. Rail carriers report that one of the biggest transportation problems from the softwood lumber dispute has been a short fall in car supply for the influx of transborder forest products shipments.

In the short term according to Alberta lumber producers, while high cost mills are closing, efficient mills are producing more to maintain profitability by increasing revenues at lower margins. In the longer term, capital intensive mill consolidation is anticipated for greater productivity gains to retain U.S. market share with lower Canadian forest product prices.

Ultimately the forest products industry may amalgamate with Key Production Centres seeking maximum economies of scale for lowest market prices. From a transportation perspective, this will lead to concurrent consolidation of cutting rights in Alberta Forest Management Areas requiring much longer log hauls. Extending productivity improvement to log hauls will entail increased substitution of rail for truck as pioneered by Alpac to reduce both transportation costs and greenhouse gas emissions.[53]

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[51] High Throughput Elevators in Alberta have been principally constructed by Agricore-United following merger of the former Alberta and Manitoba Wheat Pools with United Grain Growers, as well as by Louis Dreyfus and Cargill

[52] source: Alberta Agriculture

The Alberta Forest Products Association reports that local value-added manufacturing of mouldings, doors, windows, etc. currently consumes 10% of forest products production which could increase up to 25% over the next ten years. This higher-value traffic will move in trucks or containers. In addition, efforts to diversify away from the perennially problematic U.S. market may also focus future forest products transportation on containers for offshore export markets.

Coal

Wholesale restructuring of the western Canada coal industry includes mutual asset transfers between the Fording Canadian Coal Trust and the Luscar Energy Partnership. As a result, most metallurgical coal mining will be controlled by Fording in British Columbia and most thermal coal will be controlled by Luscar in Alberta and Saskatchewan.

Luscar reports that metallurgical coal reserves in Southeast British Columbia have been consolidated with Fording operations and are now the mainstay of coal exports from Western Canada. Northeast B.C. coal production has been terminated and Alberta coal production for export is in steep decline from 6 to 8 million tonnes annually in recent years to a negligible amount now[54].

Alberta production is mostly thermal coal. Production, now concentrated under Luscar, exceeds 25 million tonnes/year. However, following termination of supply contracts with Ontario Hydro and curtailed offshore exports, Luscar is now focused on supplying coal for mine-mouth power generation which will largely replace coal train operations or at least cut them back to short shuttles for nearby power plants within the province.

Without a resurgence in world market thermal coal prices that can absorb high rail rates to tidewater, future mine development in Alberta will be for power plants close to coal mines, with short or no rail requirements.

Chemicals

Value-adding in Alberta's energy sector has already driven a change in transportation demand from pipeline to rail at the Edmonton/Fort Saskatchewan and Joffre/Prentiss petrochemical complexes. These complexes extract feedstocks (primarily ethane) from the Alberta export pipeline system and manufacture petrochemical products that are then shipped by rail hopper or tankcar.

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[53] Alpac has reduced greenhouse gas emissions and improved log haul productivity with a 10 year contract to replace 500 long distance truckloads per day with local truck shuttles from cutting areas to satellite log landings adjacent to the Athabasca Northern Railway for rail movement including 25 miles of running rights over the Lakeland and Waterways Railway from Boyle to the Alpac mill.

[54] Source Luscar Energy Partnership

Sulphur production is a chemical by-product of the Alberta petroleum industry used primarily in the manufacture of sulphuric acid and phosphate fertilizer. Widely fluctuating world market prices for sulphur determine whether it is a profitable by-product or an environmental cost of production . Either way, rail hopper or tankcar transport are still required respectively for prilled sulphur (primarily for offshore export) or molten sulphur (primarily for transborder export).

Growth in petrochemical/sulphur transportation may parallel increasing synthetic crude and heavy oil production in northeastern Alberta along with ethane extraction anticipated from Arctic gas pipelines. However, the current trend is a shift from offshore to transborder exports.

In summary, as a result of resource industry restructuring, market repositioning and/or commodities being pushed up the value chain within Alberta, the derived demand for rail operations is:

- flat or declining for bulk carload or trainload transportation.
- increasing for intermodal container transportation, and
- shifting from offshore to transborder for chemical exports

Particularly significant is the beneficial dynamic of traffic passing through the province with container imbalances that currently favour Alberta exports. As reported by container ports and terminals, as well as ocean carriers and railways, an abundance of empty containers are made available for Alberta exports at discounted backhaul rates to balance traffic flows that are driven by eastbound Asian imports to North America.

5.2 Rail / Intermodal: Future Prospects

Rail/intermodal transportation in Alberta is emerging from the rationalization and restructuring that has been implemented by the North American railway industry to improve productivity and achieve an acceptable return on investment. As a result - with exception of the shortline segment - the railway industry generally, and the two Canadian transcontinental Class 1 railways in particular, are in a position to sustain strong economic performance going into the next ten years.

Alberta stands to benefit:

- with high quality intermodal logistics support
    - for expanding inter-regional distribution
    - and value adding activity
- with continuing low cost conventional bulk commodity transportation
    - for northern resource development
    - and export market positioning.

However, the extent to which the province can maximize this benefit will depend considerably upon joint private and public sector validation of the full scope of railway opportunities in the province and the infrastructure funding philosophy to support them.

5.2.1 Infrastructure Prospects: *Future Investment Scenarios*

Strategically, the scope of Alberta's interest in infrastructure investment should be broadened geographically and modally to better accommodate a ten year economic development outlook.

Geographically, that includes influencing infrastructure investment beyond provincial borders to build on the dynamic international trade corridor that happens to pass through Alberta between British Columbia ports and the Eastern Canada/Midwest U.S. marketplace. Alberta shares with British Columbia a vital vested interest in maintaining the global attraction of this state-of-the-art international trade route through Western Canada.

That vital interest includes expanding terminal capacity at West Coast ports to expedite increasing container traffic that is offsetting declining activity at conventional bulk/break bulk terminals. The extent to which marine container lines might otherwise be diverted to U.S. ports could compromise backhaul opportunities for Alberta offshore exports.

At the same time it will be important to monitor the transition from bulk to container for Alberta (and B.C.) resource commodity exports. Most pulp and much dimensional lumber traffic may not be converted to container transportation and the balance of traffic that can shift may revert to bulk - if the influx of imports from China prompts faster, but empty, return of containers. While it may fluctuate with container traffic imbalances, bulk shipping can still be expected to consistently move the greatest volume of resource commodities to offshore markets. There will always be a commensurate requirement to preserve terminal capacity that might otherwise be converted to container operations.

Fraser Port, Prince Rupert and Vancouver are all proposing to serve the same rapidly expanding container trade with a corresponding de-emphasis and even disinvestment in facilities for the bulk and break-bulk trades. Appropriate facility use and reinvestment timing to achieve the best mix of complementary regional infrastructure may get lost among local preferences and priorities.

A more coordinated and complementary approach to infrastructure investment and planning at west coast ports might be initiated by the Governments of Alberta and British Columbia working jointly with port authorities, terminal operators, railways and shippers. Within this approach some form of west coast ports planning authority may evolve with, for example, a tax incentive financing provision for port access and terminal investment targeted to optimize commercial benefit with the least public impact.

Action Item:

- The Governments of Alberta and British Columbia jointly work with port authorities, terminal operators, railways and shippers to project the best combination of bulk, break bulk and container facility investments, and how best to finance them.

Modally, broadening the Alberta outlook includes building on the relative advantages of private rail and public highway infrastructure while minimizing recourse to the public purse. A more modally balanced approach might include public/private partnerships to plan and fund future regional railway extension of heavy haul corridors and intermodal transfer facilities as proposed by the Railway Association of Canada.

A complementary approach might see public/private partnerships funding railway infrastructure to relieve motor vehicle congestion on parallel highways approaching capacity. Higher-speed passenger and/or trailer-on-train services could reduce the impact of capacity constraints along the Highway 2 portion of the North/South Trade Corridor; or along portions of the Trans-Canada Highway through the Mountain Parks. Potentially extending trailer-on-train operations to the Coutts/Sweetgrass border crossing might also alleviate future problems with U.S. Homeland security inspections and the implicitly greater cost of delays for individual highway trucks - each with its own driver.

5.2.2 Public Policy Prospects - *Balancing Costs and Benefits*

Over a ten year planning horizon, the Government of Alberta must carefully and credibly insure the best balance of both highway and railway infrastructure investment for goods transport. This presents a public policy conundrum in that railways are privately financed infrastructure used mainly for freight trains operated by the owners of the track.

However, Alberta highways are essentially self-financed public infrastructure used for much more than truck transport. Alberta requires highways to meet the political imperative throughout the province for convenient personal, commercial and emergency access - that is by all kinds of motor vehicles, not just transport trucks.

Based on technical studies, Alberta Transportation reports that the portion of highway construction and maintenance cost attributed to motor carriers is more than covered by provincial truck fuel taxes. Furthermore, to the extent that any public investment in private rail infrastructure might reduce truck traffic, highway expenditures in Alberta would not be proportionately reduced as:

- highway capacity is primarily a function of automobile traffic, and
- highway maintenance is largely a function of a cold weather climate.

A successful railway lobby to cut the provincial diesel fuel tax to 1.5 cents/litre from the 9 cents/litre still paid by trucks has drastically reduced the value of rail traffic from an Alberta treasury perspective. As a result, the prospect of diverting any truck traffic to railways may not be particularly attractive to a provincial government that would face lower fuel tax revenues to cover unchanging highway expenses. It should be recognized that the Province of Alberta views the fuel tax reduction as an investment by the province in railways.

However, while the current economics of public highway infrastructure investment are well balanced in the short-run, a broader policy perspective may be necessary to properly balance the full long term social, environmental as well as economic costs and benefits of both railway and highway transportation in Alberta.

From a public sector perspective, funding some portion of railway as well as highway infrastructure may warrant reconsideration in view of future economic, social and environmental opportunities:

- To lower rail carload/bulk commodity transportation cost that could increase North American market access for Northern Alberta shippers through funding for regional short line extension of railway heavy haul corridors .
- To lower rail cost for marine container transportation that could increase offshore export market access for Northern Alberta shippers through funding for regional truck/rail transfer facilities beyond Calgary and Edmonton intermodal terminals.
- To increase highway travel safety (and perhaps moderate highway construction or maintenance requirements) that could result from diverting both heavy haul and container traffic from longer combination vehicles to parallel rail corridors.
- To relieve Highway 2 congestion on the North-South Trade Corridor with funding for infrastructure improvements on the parallel Coutts-Calgary-Edmonton rail route to accommodate trailer-on-train service (and higher-speed passenger rail capability).
- To facilitate substitution of rail for highway operations where that can be shown to reduce Alberta greenhouse gas emissions (and potentially attract additional Kyoto impact funding from the Federal government).

From a private sector perspective, potential future public funding of railway infrastructure will require reconsideration of traditional track ownership implications including recognition:

- That public funding for Alberta regional shortlines is defacto funding for feeder traffic to connecting transcontinental railways which previously owned the tracks and still control the rates that extend to shortline shippers;
- That any public funding for private railway infrastructure to reduce transportation costs does not ensure that those cost savings will necessarily result in lower rates for rail dependent Alberta shippers; and
- That public funding of privately controlled rail infrastructure will likely carry with it some requirement to manifest benefits beyond increasing railway profitability at taxpayer expense.

Regardless of the extent to which any modally broadened transportation policy ultimately encourages substitution of rail for highway, a countervailing public interest policy must recognize that whether transcontinental railways are funded directly - or indirectly through connecting regional shortlines - for shippers dependent upon one railway, there is no guarantee that reduced costs will be passed through to lower rail rates rather than higher rail profits.

One such countervailing public interest policy option was proposed (see footnote 50) by Canadian Pacific Railway. To introduce the market discipline of multi-firm competition onto the B.C. provincial government infrastructure investment in British Columbia Railway, the CPR proposal was:

"... for several Class 1 railways to jointly acquire BCR and for those railways to operate BCR as a subsidiary that is neutral to its parents. The subsidiary would provide each of the parents equal commercial and operational access to present and future customers at levels that ensure the viability of the subsidiary. The owners would compete by dealing directly with the customer on an overall rate and service package."[55]

A variation of such a public interest option could be implemented on a geographically broader basis to adequately offset the legitimate policy perspective in Alberta that the competitive model for rail doesn't compare to that of truck - and therefore precludes flow through of public funding benefits. Competing transcontinental train services jointly operated on consolidated rail plant connecting to neutral regional shortlines might be extended right across Western Canada in parallel with public/private partnerships for strategic railway infrastructure funding.

The railways and various levels of government will have to investigate the full scope of strategic opportunities in order to realize potential benefits that may be available from any public participation in funding for private railway infrastructure.

Action Item:

- All levels of government work together to investigate the feasibility of the proposals put forward by the Railway Association of Canada regarding infrastructure investment for shortline railways.

5.2.3 Industry Operations - *Shifting to Containers*

While rail carload/bulk commodity transportation continues to move most of Alberta exports, intermodal rail transportation is increasingly important and growing rapidly with new markets for Alberta products.

This growth results from diverse but converging attractions:

- Most significantly - export positioning from Alberta is uniquely advantaged with a complementary array of low-cost backhaul options in both domestic highway intermodal and marine export containers.
- Increasingly important - door to door protection provided by intermodal container transportation insures identity preservation (e.g., for agriculture products), eliminates transload product damage (e.g., for specialty agriculture and forest products) and increases shipment security for higher value goods (e.g., for electronics)
- Other features - Access to frequently scheduled container ship sailings and ability to accommodate customers with smaller container load lots - versus bulk/break bulk ship loadings - as well as avoiding the additional handling cost of multi-modal transloads otherwise required at ports and/or inland terminals.

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[55] Rob Ritchie, President, Canadian Pacific Railway, speaking in Prince George, B.C. (November, 2002).

- And finally - Shifting agricultural products to containers and bypassing the elevator system allows the railways to avoid some residual economic regulation otherwise imposed by the grain transportation rate cap.

The convergence of these attractions is causing a significant shift within the rail mode from conventional rail carload traffic to intermodal rail container service for Alberta outbound shipments[56].

The ability to take advantage of multiple backhaul opportunities outbound from Calgary and Edmonton Intermodal Terminals includes both marine export containers returning empty westbound and domestic intermodal rail vans returning empty eastbound. The Burlington Northern Santa Fe intermodal facility at Shelby, Montana just below the Alberta border, also provides an additional source of backhaul opportunities.

Alberta appears uniquely positioned to balance traffic flows and obtain discounted outbound intermodal rail rates that better conventional railcar pricing for traffic typically loaded in one direction. However, traffic flows are always in flux and current backhaul opportunities may be subject to future reversal.

As well inbound intermodal shipments to Alberta are growing with an increasing emphasis on rail transportation that has resulted in a significant shift from long haul highway for both domestic and international supply chain logistics[57].

The growth of inbound intermodal rail traffic is at least in part due to:

- investment in high capacity intermodal terminals by CN and CPR at Calgary and Edmonton;
- associated provisions for marine container storage/domestic use of international containers ;.
- parallel proliferation in Alberta of intermodal, rail oriented inter-regional distribution centres;
- plus CN or CPR partnerships for rail movement of motor carriers own intermodal equipment.

However, the greatest growth of intermodal operations is in container traffic passing through the province that neither originates nor terminates in Alberta. This growth derives directly from successful partnering by the Port of Vancouver with the two transcontinental Canadian Class 1 railways to attract marine container lines seeking fast doublestack container train access to the Eastern Canada and Chicago/Midwest U.S. market. That partnership has seen the number of marine container lines calling at Vancouver double from 13 in 1995 to 26 in 2003.

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[56] Source: Alberta Forest Product Shippers Association, Canadian Pacific Railway, and Alberta Agriculture

[57] Source: Canadian Pacific Railway, Canadian Tire, and Sears Canada

Further growth of this trade corridor through Alberta is anticipated with new liner services supporting an increasing influx of imports to the U.S. and Canada from China. Whether this eastbound influx continues to provide an abundance of westbound containers at discounted backhaul rates that can enhance market access for Alberta exports is an important consideration for the future.

Action Item:

- The railways reconsider extending lower cost rail-based container service beyond consolidated intermodal hub terminals at Calgary and Edmonton to help maximize the opportunity to access export containers from rural Alberta.

Chapter

6

6 Air Transport

In this chapter we examine the current state of the Alberta aviation sector and the changes that will need to take place over the next 10 years to facilitate future shifts in the provincial economy, particularly with respect to increased value-added opportunities in processing, manufacturing and tourism.

Alberta is centrally located in Western Canada and is ideally situated as a goods distribution centre and passenger hub for the four western provinces and parts of the U.S. It is also located on the great circle routes from Europe and Asia and offers major potential as an international transshipment point for North America.

From a tourism perspective Calgary and Edmonton are the primary airport gateways for internationally renowned tourist destinations like Banff, Jasper, Lake Louise and the Rocky Mountains. Our analysis is based on a series of stakeholder interviews and a review of the current literature.

6.0 Air Transport in Alberta

Alberta Airports

Calgary International Airport: Calgary International Airport is operated by the Calgary Airport Authority, under a long term lease agreement with the federal government. The Calgary Airport Authority also leases and manages Springbank Airport, a federally-owned reliever facility located just west of the city.

In 2002, Calgary International handled almost 8.0 million enplaned-deplaned passengers, which was about double the 1992 volume. Domestic traffic accounted for 73 percent of the total, while transborder and international traffic accounted for 19 percent and eight percent, respectively.

According to the Calgary Airport Authority, it is expected that passenger traffic at Calgary will continue to grow in response to a strong Alberta economy, major energy projects, cheaper fares and the city's ongoing role as an international tourist gateway. Passenger volumes are expected to reach 11.4 million by the year 2012, reflecting average annual growth of 3.7 percent. While domestic traffic is expected to increase by an average of 3.4 percent, transborder and other international traffic is anticipated to increase by 4.3 percent and 4.8 percent, respectively.

Air cargo infrastructure at Calgary International currently consists of 400,000 sq. ft. of private warehouse space, a large cargo apron, a live animal facility and a dedicated area for the cargo integrators. Future development includes a centralized air freight village and a parallel runway, which will serve both passenger and cargo activity.

In 2002, cargo traffic at Calgary was forecast to reach 81,700 metric tonnes[58] , which was well over double the 1992 volume. This total was made up of domestic traffic at 43 percent, transborder traffic at 25 percent and other international traffic at 32 percent. It is expected that cargo traffic at Calgary will continue to grow in response to new cargo services, a growing mix of higher-value products and the re-capture of export traffic that is currently being trucked to non-Alberta airports for up-lift. Based on present forecasts, it is expected to reach 113,500 metric tonnes by the year 2012, reflecting average annual growth of 3.3 percent. While domestic traffic will increase by an average of 1.7 percent, transborder and other international traffic will increase by 3.9 percent and 4.9 percent, respectively.

Edmonton International Airport*:* Edmonton International Airport is operated by Edmonton Airports under a lease agreement with the federal government. City Centre Airport is owned by the City of Edmonton and managed by Edmonton Airports under a long-term lease agreement. Edmonton Airports also manages Villeneuve and Cooking Lake Airports, both general aviation facilities.

In 2002, Edmonton International Airport handled almost 3.8 million enplaned-deplaned passengers, which was over double the 1993 volume. Domestic traffic accounted for 87 percent of the total while transborder and other international traffic made up the remainder at 10 percent and three percent, respectively.

According to Edmonton Airports, passenger traffic at Edmonton is expected to continue to grow in response to the underlying strength of the Alberta economy. By the year 2012 total traffic is expected to reach 4.9 million passengers, reflecting average annual growth of 2.7 percent. Domestic traffic is expected to increase by an average of 2.2 percent while transborder and other international traffic will grow by 4.6 and 7.9 percent, respectively.

Cargo facilities at Edmonton International currently include two multi-tenant warehouses operated by IAT and cargo terminals operated by Air Canada, First Air, Braden Burry Expediter Services (BBE) and Echo Bay Mines. There are also two cargo aprons and a federal import quarantine station.

In 2002, combined cargo traffic at Edmonton International and Edmonton City Centre reached 39,615 metric tonnes, most of it occurring at the former facility. By 2007, the latest forecast year, traffic is expected to reach 51,000 metric tonnes, reflecting average annual growth of 5.2 percent.

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[58] In 2002, actual cargo traffic at Calgary was well ahead of the forecast volume at 105,478 metric tonnes.

Other Alberta Airports*:* There are ten other scheduled airports located at smaller communities across the province. These airports are situated at Lethbridge, Medicine Hat, Lloydminster, Fort McMurray, Grande Prairie, Peace River, High Level, Cold Lake, Rainbow Lake and Fort Chipewyan.

Although traffic forecasts are not readily available for these airports, it is illustrative to review historic passenger growth at some of the more active facilities in northern and southern Alberta.

In 2002, the Grande Prairie Airport handled 185,831 passengers, which was over double the 1992 volume. This impressive growth reflects Grande Prairie's ongoing development as a regional retail centre, the introduction of WestJet service in 1999 and oil, forestry and agricultural activity in the region. Similarly, in 2002 the Fort McMurray Airport handled 193,906 passengers, which was almost three times the volume handled ten years earlier and mainly reflects the significant impact of oilsands development in the area. Another factor contributing to air travel at these communities is their considerable distance from the major cities and their consequent reliance on air travel.

In Southern Alberta just the reverse has happened. In 2002, Lethbridge recorded 54,357 passengers, which was one-third less than the volume reported in 1992. Medicine Hat reported 27,403 passengers in 2002, which represents a 42 percent decline from ten years earlier. These reductions probably reflect the more mature nature of these economies, the relatively close proximity of the major cities, the availability of good ground transportation alternatives and the ability of the airlines to enter and exit markets under de-regulation.

Alberta Air Service

Passenger*:* In Alberta scheduled passenger service is centered around the two international airports at Calgary and Edmonton, where mainline domestic and international flights interface with regional and feeder services.

Air Canada (including Zip), WestJet and Jetsgo are the principal providers of mainline domestic service to major cities across Canada[59]. In the transborder market, Air Canada and a number of U.S. carriers provide scheduled service from Edmonton and Calgary to a number of major cities throughout the Lower 48[60]. In the transatlantic market carriers like Air Canada[61] (and its code-share partners) and Air Transat provide service to gateways like London and Frankfurt.

While there is presently no single-plane scheduled service between Alberta and Asia, charter service that operates on a seasonal basis may evolve into scheduled service.

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[59] WestJet and ZIP are both headquartered in Calgary.

[60] The U.S. airlines serving Alberta include American, United, Delta, Continental, Northwest, America West, Alaska, Horizon and Skywest.

[61] Air Canada also provides 'seamless' interline service throughout the world through its membership in the Star Alliance which includes Lufthansa, United, Air New Zealand, ANA, Asiana, Singapore, SAS and others. There is presently no Canadian airline that is a partner in the One World alliance.

Canadian North, First Air and Air North operate jet services between Alberta and the Northwest Territories and Yukon.

Carriers like Jazz (Air Canada), Peace Air, Central Mountain Air and Air Mikisew operate predominantly turbo-prop services at Lethbridge, Medicine Hat, Grande Prairie, Peace River, High Level, Cold Lake, Lloydminster, Fort McMurray, Rainbow Lake and Fort Chipewyan. It is noteworthy that service at smaller Alberta communities is mostly oriented toward Calgary or Edmonton, often making direct air travel between these smaller communities circuitous and inconvenient. However, this is typical of 'hub-and-spoke' vs 'point-to-point' operations where the directness of service is dependent on the availability of viable passenger volumes.

Cargo*:* Although a major share of cargo is carried in the bellies of passenger aircraft, Alberta is also served by a number of major all-cargo carriers, including Federal Express, UPS, Purolator, DHL, BAX Global, Cargolux, Emery and CargoJet.

The integrators (air couriers) generally consolidate shipments at Calgary and Edmonton and then move traffic over various routings for destinations in Canada, the U.S. and elsewhere throughout the world. For example, Federal Express at Calgary is fed by Morningstar from communities in Alberta, Saskatchewan and B.C. Beyond Calgary, traffic destined for other parts of Canada is carried on a Morningstar B727 while all international traffic is carried on a daily A310 flight to the Federal Express hub in Memphis, Tennessee.

Purolator, on the other hand, is fed at Calgary and Edmonton by air and ground transportation from smaller communities. All domestic shipments to the east must transit over Winnipeg while all shipments to Vancouver go direct. All shipments destined to the U.S. move over Winnipeg to the Airborne facility in Wilmington, Ohio. Other international shipments are handed over to DHL at Calgary.

The integrators report that there is a directional traffic imbalance between Alberta and the U.S. that favours the northbound direction, confirming that the bulk of Alberta's high-value trade is on the import side. However, this imbalance is correcting itself as more value-added and manufactured goods are produced in Alberta and move by air to export markets.

Cargolux serves Calgary three times a week with a wide-body freighter on three different routings that extend from the U.S. westcoast to Luxembourg in Europe. Cargolux advises that the main categories of freight they move out of Calgary to Europe and beyond are oilfield equipment, horsemeat and electronics, with oilfield equipment offering the greatest potential for the foreseeable future. They also confirm that much of their traffic is coming from the re-capture of freight that was formerly trucked to gateways outside Alberta for up-lift.

Although both major airports believe an opportunity exists, Alberta does not presently have all-cargo service to Asia because of obstacles created by our domestic industry and fostered by Canada's current regulatory environment.

6.1 Air Transport: Current Issues

The World Airline Industry[62]

Air Passenger : Economic activity (GDP) is expected to grow annually by 3.2 percent over the next 20 years and it is the major driver of world passenger demand . Other factors that drive demand are the globalization of trade and the de-regulation and liberalization of the airline industry, which stimulates air travel through lower fares, new services and added frequencies.

World passenger demand has been negatively impacted by the collapse of the technology sector in early 2001, the terrorism attacks of 9/11 and, more recently, the outbreak of SARS. The fear factor and the cost and inconvenience of added security have also dampened passenger demand, particularly in short-haul markets where security costs constitute a larger share of the overall fare.

Growing from a reduced post-9/11 base, it is expected that world passenger demand will increase by 5.1 percent annually over the next 20 years. China and South America will lead this growth, while North America will reduce its share of world traffic because of its relative maturity and consequent slower growth.

Air Cargo: Air cargo is defined to include express, freight and mail. However, the distinction between express and freight is becoming blurred as the two types of operations increasingly encroach on each other's markets with new product offerings. It is noteworthy that over the last decade the average international express shipment has increased in size from 2.7 kg. to 4.0 kg.

Technology developments that were expected to impact cargo demand have generated mixed results. While the on-line ordering of goods has not met expectations in terms of fulfillment traffic, new logistics websites for matching air cargo capacity and demand have been successful in creating new business for some cargo carriers. And, while electronic document transmission has made significant inroads into the express market, it is not expected to entirely replace envelope and parcel services – but has caused the integrators to move into the shipment of larger freight.

After experiencing a period of strong growth, world air cargo traffic started to decline in 2001 in response to a slowdown in the U.S. economy and the collapse of the technology boom. The air cargo sector continued to slide throughout 2001 and the downturn was only made worse by the terrorist attacks of 9/11. Cargo traffic began to turn around in early 2002, partly in response to the strength of the Asian market.

Air cargo demand is also driven by economic activity, as measured by GDP. World GDP growth is expected to remain strong for the foreseeable future and, accordingly, air cargo traffic is expected to grow at an average annual rate of 6.4 percent over the next 20 years.

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[62] Based on information developed by the Boeing Company "Current Market Outlook, 2002"

The Asian markets are expected to lead this growth while more mature markets like North America will grow at rates below the world average.

Over the next 20 years the number of all-cargo (freighter) aircraft in the world fleet is expected to increase by over 70 percent, with most of the growth occurring in medium and large wide-body aircraft. The trend toward wide-body freighters will mean that the average payload per aircraft will increase significantly.

The Canadian Airline Industry

The Canadian airline industry is currently going through a major change. Since most airlines carry both passengers and cargo, this change will have important implications for the long-term growth and development of the Alberta economy.

When Air Canada completed the takeover of Canadian Airlines in 2000, it was left with a dominant share of the Canadian airline market. However, a decline in full-fare business travel in the aftermath of 9/11 and intense competition from new and emerging low-cost carriers has made it increasingly difficult for network carriers like Air Canada to succeed financially.

It is expected that the low-cost carrier will become the model for the airline industry in Canada and elsewhere, particularly in short-haul markets where surface options are very competitive. Air Canada will likely emerge from bankruptcy protection during the first half of 2004 and, in order to be competitive and survive, is expected to become a lower cost airline and occupy a smaller share of the domestic market - while other low-cost carriers will step forward to fill any resulting vacancies in capacity. Air Canada will continue to be a player in international markets and there will continue to be niche opportunities to serve the full-fare traveller. It is unlikely that business travel will return quickly to pre-9/11 levels, if ever, and most carriers will have to operate at the low-fare end of the market in order to succeed.

In order to maintain frequency under conditions of reduced demand it is likely that some city-pairs will be down-gauged to smaller aircraft. Although passenger hubs never really took hold in Canada's linear east-west market (except at Toronto and Vancouver), throughout North America it is expected that point-to-point service will increasingly supplant expensive hub operations, which will take some of the strain off airports during peak traffic periods.

Owing to the evolving cost-consciousness of the airline industry, it is unlikely that smaller communities will continue to be served to the extent they have in the past, unless service can be demonstrated to be financially viable on a stand-alone basis. Gone are the days when short-haul feeder operations were cross-subsidized by full-fare travel in the long-haul segments. Indeed, certain short-haul services at smaller communities may be replaced by more cost-effective ground transportation alternatives.

Despite these changes, air cargo will continue to be mainly carried in the bellies of passenger flights, with some marked shift to all-cargo aircraft in the short-term.

The Alberta Aviation Sector

Alberta is a landlocked province that is located a considerable distance from the major markets of the world and has comparatively fewer transportation options at its disposal. Moreover, as Alberta-produced goods take on more value they will become increasingly air-transportable as the cost of shipping becomes less of a factor in the overall price of the delivered product. Finally, fast cycle logistics chains are becoming increasingly reliant on the air transport of high-value goods in order to reduce inventory requirements, guarantee delivery times, reduce loss and damage enroute and capitalize quickly on market opportunities.

The expected growth and diversification of the Alberta economy will bode well for passenger and cargo services, as economic activity is an important driver of demand in both sectors. Demand will also be stimulated by the introduction of new service, for example the ongoing evolution of low-fare service in passenger markets.

Over the next decade Alberta will continue to be mainly served by the two major airports at Calgary and Edmonton, which will undertake improvements to facilities and services to accommodate passenger and cargo growth in a changing provincial economy.

Calgary and Edmonton will continue to be the focus for international, transborder and mainline domestic services, supported by a system of airports and air services throughout Alberta and extending into Saskatchewan, Eastern B.C., the Northwest Territories and Yukon. Owing to changes in the financial structure of the airline industry, some short-haul markets will become less suited for air service and, instead, will be served by more cost-effective ground transportation alternatives. For example, air passenger traffic in the Calgary-Edmonton market has declined by two-thirds over the last 20 years because of restrictions placed on Edmonton City Centre Airport, the changing economics of the the two cities and increased competition from the surface modes.

Ongoing development in Northern Alberta (e.g. oilsands, wood products) and the promise of major mining and pipeline developments in the Northwest Territories and Yukon will shift the focus northward and enhance the role of Edmonton and Calgary as the primary aviation gateways for northern development. There will also be growing interest on the part of northern communities for improved air access to the two major cities, both for personal travel and to foster economic development in their areas.

In general, the two major airports did not identify the ongoing need for added facilities as a major challenge as both airports have privately-funded capital programs in place and are expanding facilities as traffic warrants. Although there was some interest expressed in infrastructure improvements, there was greater interest in lessening the burden of regulation, government policy, airport overhead and the regulatory obstacles thrown up by Canadian carriers against foreign airline route applications.

Alberta Aviation Trends

Although detailed passenger and cargo forecasts are not available for Alberta, it is possible to gain a reasonable understanding of future growth based on global trends, expected growth at Calgary and Edmonton and the province's historic trade patterns.

Passenger: Over the next decade scheduled passenger traffic at Edmonton and Calgary is expected to grow at an average annual rate of three to four percent. While the domestic market will continue to account for the dominant share of traffic, the fastest growth will occur in transborder and other international markets, where growth rates will approach or exceed five percent.

Scheduled traffic across Northern Alberta will likely continue to grow at rates in excess of five percent per year, buoyed by the economic activity at communities like Grande Prairie and Fort McMurray. Traffic at smaller communities in Southern Alberta will likely remain relatively flat because of the more mature nature of these economies and the availability of comparatively attractive ground transportation alternatives.

Cargo: It is expected that air cargo activity will continue to be concentrated at Edmonton and Calgary. It will grow at an average rate of three to five percent and into a broader range of higher value goods, including energy-related equipment, electronics and agri-foods. This is based on the continued development of Alberta's manufacturing and value-added sectors and forecasted growth at Edmonton and Calgary.

Even higher rates of growth will be achieved through the stimulative effect of new cargo services. It is also expected that the current imbalance favouring import traffic will become less pronounced as Alberta's manufacturing and value-added sectors develop and grow.

While domestic cargo will continue to grow at an average rate of around two percent, the greatest growth will occur in transborder and other international markets where rates will range from four to five percent.

6.2 Air Transport: Future Prospects

6.2.1 Government Regulations and Policy

International Air Service Agreements

The liberalization of Canada's international air service agreements is fundamental to the ongoing growth and development of Alberta's value-added economy. Present agreements contain restrictions that hamper the ability of foreign passenger and cargo carriers to introduce capacity and operate in a way that will adequately respond to the needs of the Alberta market. Indeed, the lack of cargo capacity in Alberta has caused cargo to be transported to other gateways outside the province for up-lift. Even the so-called 'open skies' treaty with the U.S. contains restrictions that prevent a U.S. carrier from enplaning traffic at an Alberta point and transporting it to a third country (fifth freedom rights) or serving more than one Alberta point on the same cargo flight (co-terminalization).

The European Union has recently received authority from its 15 member countries to negotiate a single aviation treaty with the U.S. This would replace existing agreements between the U.S. and 11 EU countries. It would ultimately create an open transatlantic market between the U.S. and the EU within which airlines from any of the member countries could operate free of any restrictions on routes, fares and frequencies. Canada could be severely disadvantaged if it did not become party to such an agreement since Canadian passengers would be encouraged to flow over U.S. gateways where fare and service options would be relatively more attractive.

Since most cargo is carried in the bellies of combination aircraft, passenger and cargo operations have traditionally been addressed under the same agreement. However, all-cargo services are different than passenger services and require greater flexibility in how they are allowed to operate. Accordingly, a case can be made for giving all-cargo services separate treatment within air service agreements.

It is suggested that allowing U.S. all-cargo services, particularly the integrators, to co-terminalize would have a damaging effect on their Canadian counterparts. However, it can be argued that the purpose of international air service is to foster development in all industry sectors, not just the airline sector. It is also important for air service to be sufficiently flexible to fully capitalize on the free-trade opportunities that are available under NAFTA and other liberalized trading arrangements.

Action Items:

- The Alberta Government should seek official observer status at air treaty negotiations between Canada and other countries.
- Alberta should advocate for truly liberal air service agreements that include such provisions as fifth freedom rights and all-cargo co-terminalization.
- Alberta should advocate for inclusion of Canada in a proposed multi-lateral, transatlantic open skies agreement with the European Union.
- International all-cargo services should be addressed separately in air service agreements.

Taxes, Fees and Charges

Various fees and charges are imposed on Alberta's aviation users that affect the ability of our airports to compete with airports elsewhere and, in turn, effectively serve the province's growing value-added economy.

The Alberta and federal governments both impose taxes on aviation fuel. The federal government charges an excise tax of 4.0 ¢ per litre on jet fuel and in 1996 the Province reduced its tax from 5.0¢ to 1.5¢ a litre. Although the current Alberta charge seems nominal, for a wide-body aircraft flying a long-haul segment it represents a sizable additional cost and makes our airports uncompetitive with airports elsewhere.

In the aftermath of 9/11, the Canadian government implemented a passenger security charge that amounts to $14.00 on a domestic flight and $24.00 on an international flight for a return ticket. This charge creates another disincentive for people to fly, particularly in short-haul markets where it represents a substantial share of the overall ticket price. It can also be argued that the cost of additional security should be spread across the entire Canadian public and not funded by the air passenger alone.

Since 9/11 insurance costs in the aviation industry have skyrocketed and are generally much higher in Canada than in the U.S., where government provides a greater level of support for the industry.

Nav Canada is the non-government, non-shareholder entity that in 1996 took over the operation and administration of Canada's air navigation services from the federal government. It derives its revenue largely from terminal and enroute charges it applies to aircraft that operate in Canadian air space. These charges can be substantial, particularly for wide-body aircraft, and can affect the competitiveness of Alberta's major airports and their ability to attract international air services.

Smaller scheduled airports like Grande Prairie and Fort McMurray may incur substantial additional costs to meet new federal standards for Aircraft Emergency Intervention Services (CAR 308).

Action Items:

- Take immediate action to eliminate the remaining Alberta Government tax on aviation fuel.
- Alleviate the burden of any unreasonable taxes, fees and charges that impose a burden on passengers and shippers and inhibit the ability of Alberta airports to compete effectively in attracting traffic.

Airport Rent

When Alberta's two major airports were transferred from federal to local control they were required to make annual rent payments to the federal government. At present, Calgary International and Edmonton International pay about $24 million and $3.0 million, respectively, and by 2006 the amount will double at Calgary and increase five-fold at Edmonton if current rent formulas are not re-negotiated on more reasonable terms.

Since the airport authorities were formed at Edmonton and Calgary both have been responsive to local economic development and have improved their respective airports in a way that would not have been possible under previous federal control. Furthermore, the federal government does not contribute to the upkeep and improvement of these airports in return for the rent it receives. Therefore, the current rent is punitive in the circumstances.

Since this rent is passed onto the user, it imposes yet another cost on the travelling and shipping public that affects the ability of our airports to compete with airports elsewhere and, in turn, support the development of the Alberta economy.

Action Item:

- Advocate for re-negotiation of federal airport rent formulas on more reasonable terms or, failing that, the outright transfer of airport ownership to Alberta's local airport authorities as they become viable.

6.2.2 Infrastructure and Services

Airport Ground Access

The Calgary and Edmonton airports have both identified efficient ground access as being vital to their ongoing growth and development and to facilitate intermodal movements, both locally and regionally. The City of Edmonton and the City of Calgary have also stressed the need to complete ring-road development in order to relieve overall congestion and facilitate the movement of trucks within and around the two major cities.

It is important to note that trucks will play an increasingly important role as Alberta's value-added economy evolves. It is also noteworthy that the Alberta and federal governments have recently committed joint funding for further construction (not completion) of proposed ring-roads at Calgary and Edmonton. More recently, the Province has announced that the southeast leg of the Edmonton ring-road will be constructed under a 'public-private-partnership' and, if successful, this same model will be extended to ring-road completion in both Calgary and Edmonton.

Action Item

- Completion of ring-roads at Calgary and Edmonton should be given a more immediate priority as a means of facilitating truck, bus, and automobile movements that are important to Alberta's airports and will be increasingly vital to Alberta's growing value-added economy.

Foreign Trade Zones

Although foreign trade zones are not officially recognized in Canada, the federal government does offer a program that provides varying degrees of duty-relief on imported goods that is not tied to a specific geographical site.

The Bonded Warehouse option provides relief from duties and taxes (including GST) for up to four years. These charges only become payable on the portion of goods that ultimately enter the Canadian economy. While in this environment goods may undergo some value-added manipulation, including labelling, packaging, testing and assembly.

The Duty Reliefs option provides up-front relief from duties for up to four years on imported components that become part of a manufactured product that is exported.

The Duty Drawback option allows for the refund of duties and taxes on the portion of manufacturing inputs that were imported into Canada and then ultimately exported in a finished product.

While there is a not a regulated requirement for specific geographical sites, there is an attractive opportunity to install physical facilities at Alberta's major airports that would serve to promote the province's value-added economy.

Action Item:

- Create 'Foreign Trade Zones' at Alberta's major airports that would enhance the international profile of these airports, provide awareness of Canada's duty deferral program and create an international showcase for the province's value-added products.

Non-Scheduled Airports

In the future some important decisions will have to be made about Alberta's extensive system of smaller non-scheduled airports. While the contribution of these airports to the provincial economy can vary, approximately 80 of these facilities have benefited from extensive Alberta Government funding in the past.

A recent study sponsored by the Alberta Aviation Strategy Action Group has identified a requirement for an investment of $97 million to further rehabilitate the province's smaller airports over the next ten years. In addition, the prairie provinces participated in a national small airport viability study that concluded that 50 percent of Canada's smaller airports will require external support in order to remain viable.

Although the Province still has a small pool of capital funding ($2.0 million) available for non-scheduled airports, it has largely withdrawn from airport investment. While some of these airports serve in a medi-vac or firefighting role, many attract very little activity in relation to their overall cost of operation and maintenance.

Action Item:

- The Alberta Government work in conjunction with the federal government, municipalities and other aviation stakeholders, to develop a strategic plan on the future of the province's smaller non-scheduled airports.

Tourism Development

Alberta is an international-calibre tourist destination and tourism is an important driver of the Alberta economy. However, it will require ongoing promotion and development to attract growing volumes of visitors, particularly in view of fluctuations in world economies and recurring international crises.

The tourism sector is made up of a number of important players and the gateway role played by Alberta airports, particularly at Edmonton and Calgary, is critical to the overall success of the industry. Although the Alberta Government already partners with industry and the communities in tourism promotion, it is important that an appropriate share of promotional funding be directed to partnerships with the airports.

Action Item:

- The Alberta Government work with the province's airports in developing partnerships and allocating funding for the promotion of Alberta's tourism development.

International Cargo Development

Owing to its strategic position on the great circle routes, Alberta has the potential to develop as an international distribution platform for cargo destined for points throughout North America. Cargolux already provides freighter service between Calgary and Europe and an opportunity has been identified by the Calgary Airport Authority for service between Alberta and Asia. There is also an opportunity to build on this capacity and develop Alberta as a transshipment point for cargo flights from multiple overseas points.

Alberta's development as a transshipment platform will also provide critical mass to assist the province's growing value-added economy in accessing international markets. However, Alberta's ability to compete in this area will be influenced by the availability of airport infrastructure and the burden of fees and charges and government regulation that foreign carriers encounter when trying to operate in Canada.

Action Item:

- The Alberta Government and the two major airports should cooperate to develop Alberta as a competitive cargo destination and as a transshipment platform for cargo moving between multiple overseas points and markets throughout North America.

Northern Alberta Communities

The future of scheduled air service at smaller Alberta communities will depend on their ability to sustain traffic at prevailing fares.

Most air service at smaller communities is oriented toward the major cities of Calgary and Edmonton. In short-haul markets surface transportation alternatives are normally quite competitive and, indeed, may supplant existing air service. However, on longer routes, like at communities in Northern Alberta, surface transport is a less attractive option and air service takes on a much more critical role.

During the interview process Grande Prairie and Peace River expressed a need for improved air service to Edmonton, particularly City Centre Airport, as an economic development tool and as an incentive for skilled workers to move to the region. The ability of transplanted workers to readily access amenities in the major cities makes re-location to Northern Alberta more acceptable.

It is noteworthy that in the U.S. local government and industry have entered into incentive arrangements with the airlines to 'guarantee' a certain number of seats as a means of ensuring a reasonable level of air service at selected smaller communities. Alberta communities lacking air service and convinced of latent demand may wish to consider such incentives.

Action Item:

- Where surface transport does not exist or does not offer an attractive alternative, the airlines should be encouraged by local government and industry to maintain a suitable level of service at smaller Alberta communities – perhaps with innovative incentives.

Chapter
7

7 Human Resources and Education

The goal of this chapter is to provide a more focused examination of the human resources dimension of Alberta's transportation sector. Almost every stakeholder pointed to a human resources issue which requires concerted action on the part of industry, educators and government. The looming workforce shortages associated with retiring baby-boomers across the economy are even more pronounced in the trucking and railway sectors. The truck and bus industry is experiencing persistent driver shortages today.

7.1 Human Resources: Industry Perspectives

7.1.1 Motor Carriers

Motor carriers operating both large and small fleets are finding the availability of properly trained drivers to be a serious and growing problem. The concern that a class one commercial drivers license is viewed as too easy to obtain in Alberta, is being addressed by Alberta Transportation. Drivers under the age of twenty-five find that increased insurance premium costs form a significant barrier for their employability.

Driver Training & Work Conditions

Larger motor carriers are training their own drivers but acknowledge the poor image truck drivers have as a career. There is a requirement to move it towards a "profession" and promote it more aggressively in high schools and with parents.

The Alberta Motor Trucking Association has suggested the introduction of a "graduated" license program regime which would lead up to the awarding of a Class 1 license. This regime would include either a completed apprenticeship program, or the accomplishment of a number of years service with specific experience being required. Such an initiative is currently being pursued by the Transportation Training and Development Association (TTDA), funded by the Province of Alberta and The Canadian Trucking Human Resource Council (CTHRC). Post secondary institutions have expressed an interest in including this program in their course curriculum.

The new national safety code which has been introduced by the Federal Government revises the hours of work for drivers. The proposal provides for longer rest periods between shifts and greater flexibility in adding unused driver time to subsequent shifts. In no case however, can a driver work more than 13 hours behind the wheel. It is anticipated that the new code should be approved by Parliament in the near future.

Most carriers welcome the changes and see them as a partial remedy to reversing the growing trend of drivers leaving the field due to hours spent away from their families.

7.1.2 Warehousing and Logistics

The warehousing and logistics sector has identified developing and maintaining a workforce, as a primary concern. The skills the industry is seeking are beyond driving and handling products. There is a need identified for computer literate individuals with strong problem solving and team work skills. Their sector is very information intensive, with the electronic exchange of information being as important as the physical exchange of goods.

7.2 Education

7.2.1 Context: The role of Education

The growth of Western Canada's economy over the past two decades has enabled Albertans to experience a high standard of living and a high quality of life. Other portions of this study presented in greater detail, an analysis of the economy of Alberta. It is however, worth noting that other studies are concluding that in order for Alberta and Western Canada to sustain and maintain a high quality of life for its residents over the long term, policy makers and leaders must come to grips with a number of important challenges. The region will soon face serious labour shortages that will make it difficult for the economy to perform beyond its current level of potential output.[63]

A recent report by TD Economics[64] indicates that the economy of the Calgary/ Edmonton corridor has reaped the benefits of one of the most highly skilled workforces in the world. One of the challenges identified in the study is that rapid growth in the corridor is creating vulnerability in the all-important areas of education and innovation. The study notes that Alberta lags behind other provinces in share of high school students moving on to post-secondary education highlighting the region's reliance on luring well-educated individuals from other provinces for its pool of skilled workers. The TD study also recognizes that both the private and public sectors in the Calgary/Edmonton corridor have been witnessing growing labour shortages in recent years.[65]

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[63] The Conference Board of Canada – Insights on Western Canada (A Socio-Economic Report for Western Canada) (Draft) May 2003, Page 1

[64] TD Economics Special Report, (Take Action Now to Ensure Tigers' Roar Doesn't Fade), April 22, 2003, pg. 2

[65] Ibid pg. 24

The importance of education in Western Canada has recently been confirmed by a recent survey of Western Canadians carried out by the Canada West Foundation [66]. Not surprisingly, health care and the environment ranked highest in the range of concerns for Western Canadians; however, improving the K – 12 education system and improving the post-secondary education system also ranked very highly. These priorities would likely be reflective of the priorities of Albertans.

The Canada West Foundation survey indicated that there was a high priority in the West for retaining young people. This is a concern that focuses on small towns and reflects an outward migration by those who attain a higher level of education. The development of rural industries is a priority in Western Canada.

The concerns over the retention of young people and the development of rural industries could have a common point of intersection with transportation and transportation education. . With the development of value-added products in rural communities, the need for transportation and logistics expertise can most likely be fulfilled by a locally trained resident.

The magnitude of the labour problem facing transportation is easy to underestimate, but the facts are sobering. The transportation workforce is aging rapidly and retirements will surge as the "baby boom" generation begins to depart the labour force. For some modes of transportation, the downsizing that occurred following deregulation in 1987 magnifies the effect. For example, the railways had surplus labour and therefore had no need to recruit younger employees for many years. Consequently, the average age of the remaining workforce increased faster and as retirements now occur in this decade, replacement rates will be higher than previously experienced.[67]

The Jobs For The Future Committee of the Alberta Economic Development Authority has presented a draft study to the Authority entitled, "An Urgent Call to Action". The report indicates that there is "a current and growing shortage of highly skilled people to fuel the economy and fill the jobs industry so desperately needs to keep their businesses going and Alberta's economy growing. Simply put, we cannot achieve the full potential of Alberta's economy if we do not have the people to do the work, fill the jobs, create new ideas in innovations, build the businesses and drive the economy".[68]

The report continues, "Alberta's shortages of skilled labour are a serious problem today and all indications are that those shortages will become even more acute in the future. Alberta is not alone. Across Canada and around the world, many provinces, states and countries are facing similar challenges of attracting and keeping the highly skilled people they need". [69] The study notes that Alberta is moving towards a value-added economy and that global economies are changing around the world.

It is recognized in Alberta, through reports developed by the Alberta Financial Review Commission that Alberta cannot count on resource revenues forever. The new energy technologies being utilized to develop oil sands production, enhanced oil recovery, coal bed methane and clean coal technologies, all demand skilled workers, particularly in the field of supply chain and logistics.

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[66] Canada West Foundation – Looking West 2003 – A Survey of Western Canadians – Page 14
[67] Dr. Barry Prentice, National President, National Transportation Week, 2003 – President's Message
[68] AEDA, Jobs for the Future Committee (2003) "An Urgent Call to Action" – Page 2
[69] Ibid – Page 2

"An Urgent Call to Action" makes some specific recommendations which are completely consistent with the recognition that skilled and knowledgeable workers in the field of transportation/supply chain/logistics need to be trained through educational programs established today upon which we can build for the future.

"The potential of Alberta's economy is outstanding, particularly as we move more into value-added sectors and increase our ability to compete in a global marketplace" Unless action is taken, Alberta will fall short of achieving the goal of having the most highly skilled workforce in the world. The weakest link is our ability to educate, train, attract and retain a sufficient supply of highly skilled people to fuel and sustain Alberta's economy. More importantly, we will not be able to ensure that young Albertans have the skills they need to participate in and shape the future of Alberta's economy".[70]

7.2.2 Current Status: Where Are We Today?

When the Van Horne Institute was founded over ten years ago, it was very clear that there were little or no structured courses in transportation studies available to students wishing to develop a career in the field. Fortunately, over the last ten years there have been some developments in transportation education and related public policy research, but we have only scratched the surface.

In 2000, Transport Canada engaged the Research Traffic Group to do an inventory of professional training in transportation across Canada. The Terms of Reference for the study included the following observation.

"On a more fundamental level, several persons and organizations have suggested that the availability of professional education in transportation and university transportation centres in Canada is not adequate and that there is a shortage of the qualified personnel required by governments and the transportation sector".[71]

The study continues in its introduction by noting, "It seems relevant to start by considering why, although transportation accounts for approximately 7% of Canada's economic activity, the demand for university trained transportation specialists would seem at least an order of magnitude lower".[72] The study indicates that several potential reasons including the transportation function and its management is perceived to be below university trained professional level and that the job market is satisfied by the hiring of candidates with more general skills and that transportation knowledge can be picked up on the job.

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[70] An Urgent Call to Action – Page 29

[71] Research in Traffic Group, Inventory of Professional Training in Transportation 2000 – Page 1

[72] Ibid, pg 1

Today that mindset has changed significantly. Member companies in the Van Horne Institute continue to lobby for and insist upon the development of educational curriculum which will place graduates with transportation skills within their organization. The company will then expose the new employee to the specific characteristics and requirements of its business.

The Transport Canada study identified only one formal university transportation centre and institute in Alberta: The Van Horne Institute's Centre for Transportation Studies at the University of Calgary. They concluded, correctly, that Calgary does not have an operational transportation program (in 2000) other than the civil engineering program which is also referred to in the study.

A review of current transportation education in Alberta demonstrates that there has been some progress since the Transport Canada study. However, Alberta's transportation industry has requested that we emphasize to the Government of Alberta that there is some significant distance still to be traveled to achieve the goal of meeting the needs of the industry for skilled professionals.

This plea is supported by a recent survey by the Centre for Innovative Management at Athabasca University. Under the direction of Dr. Peter Carr, the Centre carried out a supply chain collaboration survey in 2002 with the assistance of the Canadian Purchasing Research Foundation. The key messages coming out of that survey indicate that technology is advancing the ability of companies to increase their efficiency in the supply chain but that technology requires / forces the upgrading of skills for current employees and demands high skill levels of those entering the workforce.[73]

7.2.3 Current Programs and Recommendations for Action

As population demographics shift, it is probably fair to conclude that there will be significant competition over a wide variety of industries to attract graduates from the upcoming student population. In order to be successful in attracting individuals into a career in transportation, the awareness level of secondary school students as to the role transportation plays in the economy, must be enhanced. The challenge to enhance the awareness as to the importance of transportation as a career to secondary school students should be addressed jointly by Alberta Learning and the transportation industry.

The Joint Learning Initiative in Logistics (JLI)

The JLI has been developed by a consortium of education, business and government partners. Modest funding has been granted by Alberta Learning for the development of logistics modules which have been taught in the final two years in a selected number of high schools in Calgary.

This program, entitled "Career Pathways", includes some very detailed learning in logistics. Students are given opportunities to explore many aspects of distribution, warehousing and transportation of goods from producer to consumer. A student is exposed to designing, controlling, implementing, managing and operating the transportation of such goods. This initiative has been very well received by students and parents and has started to create an awareness amongst that cohort as to the importance of transportation and more to the point, that a career in transportation is available and attractive.

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[73] Centre for Innovative Management, Athabasca University - Supply Chain Collaboration Survey 2002.

The logistics model will be built upon, improved and digitized to make it available to schools across Alberta and Canada. The joint learning initiative should be extended for application in schools attended by Aboriginal and Inuit students interested in seeking a career in transportation and logistics that will assist them to develop their potential and that of their communities.

The continued and enhanced support of the Alberta Government to ensure that the target of expanding the availability of this program is realized, cannot be too highly recommended.. The transportation industry must do its part by working with educators to support this initiative. Greater awareness of transportation/ supply chain management/logistics as a career will lead to greater demand for post-secondary education in this field, thereby meeting the needs of the transportation industry.

Action Item:

- The Government of Alberta with the support and advice of industry expand its support of the development of the Joint Learning Initiative throughout secondary schools in this province.

Southern Alberta Institute of Technology/University of Calgary – 2 + 2

SAIT and the University of Calgary have collaborated on a unique transportation education program which, as a follow on to the Career Pathways/JLI initiative could be referred to as the 2 + 2 + 2. The program is designed with multiple entry points. The entrance requirement to both SAIT and University of Calgary are the same. A student can enter SAIT for two years of supply chain/logistics and related subjects, graduating at the end of that period with a Diploma and enter the workforce. The student could choose to ladder the two-year Diploma into an additional two years at the University of Calgary leading to a degree in transportation studies. The course awaits funding from Alberta Learning. Like the other courses described herein, industry support can be clearly demonstrated.

Grant McEwan College

Grant McEwan College has developed a Bachelor of Applied International Business in Supply Chain Management. It is a four-year applied degree program that has been operating for three years at the College. Its funding was granted by Alberta Learning under the Access Program.

Mount Royal College

Mount Royal College has developed an Applied International Business in Supply Chain Management course based in part on the course offered by Grant McEwan College. There has been no Access funding for this program and the organizers are attempting, with modest success, to raise funds from the private sector to initiate the course offering in the fall of 2003.

As of the date of writing this report, Mount Royal had received 80 qualified applications for the 35 positions available.

Athabasca University

Athabasca University has developed the Supply Chain Collaboration Online Research Institute (SCCORI). This Institute is developing collaboration for online research which will allow practitioners in the field to work together on a co-operative basis to determine opportunities for relationship management in the supply chain.

The Center for Innovative Management has also developed the Supply Chain Collaboration Survey supported by the Canadian Purchasing Research Foundation. This survey has been referred to in this study. The study indicates the growing importance of supply chain management in organizations and supports the need for enhanced training and education opportunities.

Other Transportation Offerings in Alberta

During the course of researching this report, a number of other course offerings with transportation components were identified. The following list is not meant to be exhaustive but represents a sample:

Fairview College-warehouse training program;
Lakeland College – Professional Transport Operator program;
NAIT – 2-year programs in: Aviation Pilot Training, Avionics Engineering Technology, Petroleum Engineering Technology, and Telecommunications Engineering Technology,
SAIT – 2-year programs in: Aircraft Maintenance Engineers Technology, Avionics Technology, Automotive Service Technology , Rail Traffic Control,
SAIT – 1-year programs in: Aircraft Structures Technician, Heavy Equipment Technician, Railway Conductor,
SAIT – First-year of the Business Administration-Automotive Marketing (note: all students must transfer to Georgian College in Barrie, ON, to complete the program and graduate from Georgian).

In addition, SAIT offers apprenticeship programs in the following areas: Automotive Service Technician, Auto Body Technician, Recreation Vehicle Service Technician, Transport Refrigeration Technician, Heavy Equipment Technician.

What is the demand for transportation/supply chain skills?

The report and recommendations of the Jobs For The Future Committee focus on the transition of the Alberta economy from resource-based to value-added. The findings in this report are predicated as well, on this transition. The demand for knowledgeable transportation practitioners will grow as the shift towards a knowledge-based economy occurs.[74]

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[74] Centre for Innovative Management, Athabasca University - Supply Chain Collaboration Survey 2002

Dr. Barry Prentice observes that "Contrary to many mature industries, the employment outlook for transportation is very positive. Unlike production oriented industries, transportation and logistics services are difficult to automate. Certainly a great deal of new equipment and innovations have been added in the past few decades. Much of this technology is directed at improving the speed and accuracy of freight and passenger movements in order to keep up with the added volume of activity. The growth of international trade has spurred the demand for transport. For example, Canada/U.S. trade has more than doubled since the signing of NAFTA. This has been a corresponding increase in the volume of transport services".[75]

The determination of the actual number of employees who require transportation-related skills will always be a challenge. The Career Pathway in logistics initiative of the Calgary Board of Education has identified some 60,000 jobs in logistics growing at an annual rate of 10%. Transport Canada[76] notes that in 2002, employment in Canada rose by 2.2% with the creation 335,000 jobs. Over the last five years, the number of full-time jobs related to transportation totaled more than 800,000. Transport Canada is not, however, in a position to assess whether total employment in the transport sector followed the national trend, particularly given that the air transport industry was severely affected by the economic slowdown and air transport related employment decreased by 7.2%.

The following statistics are informative:

- Grant McEwan College – 80 students per year will graduate from the Bachelor of Applied International Business in Supply Chain Management.
- University of Calgary – attendance in existing theme school courses is growing. The University has identified the transportation degree program as a priority for funding applications.
- Joint Learning Initiative – students are graduating out of high school with a knowledge of the value of a career in transportation. They need to be connected with existing and expanded course offerings. SAIT – current program of Careers in Transportation indicate 96% of their graduates from the previous year are employed[77]

The most recent Alberta Careers' Update for 2003, indicates that:

Employment growth in Alberta will continue, but at a somewhat slower pace. The annual average employment growth rate for the past five years has been 3% but that is expected to decline to 2% for the next few years. A major challenge will be matching the demands of the new workplace in a changing economy with the skills of Alberta's workforce.

Employment growth will not fit neatly into any one category or industrial sector. Growth is expected in sectors such as resources, manufacturing, services, and information and communications technology, but even within these sectors, there will be strong and weak areas of growth. Over the next five years, there will be strong demand for occupations that need university degrees, especially in tourism, nursing, and industrial and electronic engineering. Projections are that over a fifth of all new jobs will go to university graduates. Nearly a third of all new jobs will be occupations requiring post-secondary college, technical and trades training.[78]

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[75] Dr. Barry Prentice, National President, National Transportation Week, 2003 – President's Message

[76] Transport Canada – Transportation in Canada 2002 Annual Report (Page 8)

[77] SAIT – Graduate Employment Statistics 2002

The Government of Alberta has a real opportunity to become proactive in the field of transportation education. In so doing, Alberta will be seen to be responsive to the objectives contained in "Partnering for the Future - A Transportation Vision for Canada" drafted the Provincial and Territorial Ministers of Transportation. Investment in transportation education would reflect the objectives contained in that paper of sustained funding programs, providing mobility and reasonable access for all Canadians and the development of an efficient transportation system.[79]

Action Item:

> Funding for courses in transportation by Alberta Learning should be re-established and applicable to the fall 2004 semester

At the local level, Alberta Learning, in conjunction with Alberta Municipal Affairs, could develop a series of skills training courses in transportation/supply chain/logistics related fields in both the urban and rural regions of this Province. These courses could be developed collaboratively between major post-secondary institutions offering courses through satellite units established in the rural areas. The delivery of courses in warehousing, transport operator programs, and basic supply chain/logistics would allow local students to learn and continue to live in their communities. This would also support initiatives designed to assist aboriginal communities to develop programs that are relevant to their way of life within their existing community structures.[80]

Action Item:

> Alberta Learning, in conjunction with Alberta Municipal Affairs, local communities and industry where applicable, develop a needs assessment for Transportation / Logistics Training in Alberta's rural communities to facilitate the development of such skill training courses.

If Alberta is to become a leader in the post secondary education and training of individuals who will facilitate our emerging value-added economy and presumably similar economies across North America, then it follows that an investment in education in transportation is a necessity. We would advise the Government of Alberta to consider the development of Centres of Excellence in Transportation Education and Public Policy Research.

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[78] An Urgent Call to Action – Page 15

[79] Partnering for the Future – A Transportation Vision for Canada – Provincial and Territorial Minister responsible for transportation highway safety, August 2002

[80] In communities where resource extraction offers opportunities for local employment and career development, reference should be made to the multi-party training plan developed in Saskatchewan in 1993 for the extraction of uranium. This plan was developed by the Saskatchewan Department of Education, Training and Development, the Federal Government represented by HRDC, the mining industry and the Grand Council of Status Indians. See Large Mines in the Community, the World Bank, Washington, DC 2001

The Alberta Government can take credit for the development and funding of a number of centres of excellence through the Alberta Science and Research Authority (ASRA). Examples for this development are as follows.

1. The Alberta Agricultural Research Institute is the primary agency in Alberta for funding, co-ordinating and promoting strategic agricultural research initiatives and technology transfer in the agriculture and food sector.

2. The Alberta Energy Research Institute provides strategic direction to position Alberta for the future in energy development and invests in research and technology to enhance the sustainable development of the Province's abundant energy resources.

In 2001, ASRA helped establish the National Institute for nano-technology at the University of Alberta. It also helped create the Banff International Research Station for mathematical innovation and discovery.

The Government of Alberta could use that experience to develop, through the Alberta Economic Development Authority (AEDA), a similar program for the funding of a Centre of Excellence in Transportation Studies. The Van Horne Institute currently works on the development of courses in transportation and public policy research in this field. Its role could be expanded to work closely with the academic programs currently being provided at the post-secondary level and focus search activities in transportation on those issues which government and industry determine jointly to be of importance in the development of this province.

Action Item:

- The Government of Alberta support a Centre of Excellence in Transportation and related public policy research in Alberta, such as the Van Horne Institute, using the ASRA model for funding.

References

AEDA, Alberta Economic Development Authority, An Urgent Call to Action, Report and recommendations of the Jobs for the Future Committee, (March 2003)

Alberta Transportation – "Future Highway Needs: A 10 Year View on Alberta's Transportation Needs." http://www.trans.gov.ab.ca/Content/doctype523/production/pol288.htm, accessed Oct., 2003

Alberta Transportation (2003), 2001 Alberta Transportation and Trade Report, obtained at http://www.trans.gov.ab.ca/Content/doctype56/production/pol299.htm, accessed, May 20, 2003

Alberta Transportation, '2001 Alberta Transportation and Trade Report', Alberta Air Trade.

Bess, I., and McKeown, L. (1997) The emergence of logistics services: Measurement issues, Statistics Canada, Services Division, Catalogue no. 63-016-XPB, Ottawa

BTS (Bureau of Transportation Statistics), (1998) The Economic Importance of Transportation Services: Highlights of the Transportation Satellite Accounts, BTS/98-TS/4R, April 1998

Canada West Foundation – Looking West 2003 – A Survey of Western Canadians – Page 14

Centre for Innovative Management, Athabasca University - Supply Chain Collaboration Survey 2002.

Christopher (1999) , quoted by Athabasca University, Centre for Innovative Management, Supply Chain Collaboration Survey 2002

Consulting Engineers of Alberta – Submission to Province of Alberta Financial Management Commission

Edmonton Regional External Truck Commodity Survey

Flakstad, N., (2002) Roadweary, Alberta Venture, December, 2002, pp. 67-70

Mark, K. (2002) Intermodal Momentum, Materials, Management and Distribution, July/August, 2002, pp 23- 24

Nix, F. (2002) Making the Best of It, Canadian Transportation and Logistics, April, 2002, pp19-21

Partnering for the Future – A Transportation Vision for Canada – Provincial and Territorial Minister responsible for transportation highway safety, August 2002

Potyondi, B. (2003) The Logic in Logistics, Business in Calgary, April 2003, pp.14-19

Prentice, B. (May 2003) National President, National Transportation Week, – President's Message, personal comments

Presentation to Deputy Minister of Transportation "The Inter-city Motor Coach Industry in Canada" – June 26, 2003

Report of the Standing Senate Committee on Transport and Communications – Intercity Bus Service in Canada."

Research in Traffic Group, Inventory of Professional Training in Transportation 2000 – Page 1

Ritchie, R.. (November 21, 2002) , President and CEO, Canadian Pacific Railway, "Freight Rail in British Columbia", an address to the Government of British Columbia Northern Transportation Conference in Prince George, B.C., personal comment.

Robertson, R. (2003) Winding Road Ahead, Materials Management and Distribution, Jan./Feb 2003, p. 14

Sanchez, M. (2003) Chaos Reigns, Materials Management and Distribution, March 2003, pp. 23-25

Source of Information on all Charts and Graphs included in this section a combination of Statistics Canada "For Hire Trucking Survey" and Statistics Canada Trade Merchandise database custom tabulation prepared for Alberta Transportation

Statistics Canada (various years). Canadian Civil Aviation. Annual Report Publication 51-206-XIB.

Statistics Canada. (various years) Rail in Canada. Annual Report Publication 52-216-XIB.

Statistics Canada. (various years) Trucking in Canada. Annual Report Publication 53-222-XIB.

TD Bank, Financial Group (2003) The Calgary-Edmonton Corridor: Take Action Now To Ensure Tiger's Roar Doesn't Fade, TD Economics Special Report, Spring 2003, Page 26.

TD Economics Special Report, (Take Action Now to Ensure Tigers' Roar Doesn't Fade), April 22, 2003, page 2

TD Economics Special Report, , (Take Action Now to Ensure Tigers' Roar Doesn't Fade), April 22, 2003, page 24

The Conference Board of Canada – Insights on Western Canada (A Socio-Economic Report for Western Canada) (Draft) May 2003, Page 1

Transport Canada – Transportation in Canada 2002 Annual Report (Page 8)

Transport Canada – Transportation in Canada 2002 Annual Report, Page 1

Transport Canada (2003) Straightahead: A Vision for Transportation in Canada, Transport Canada Report TP 14054, Ottawa, pg. 53

Transport Canada (May 2003) Transportation in Canada: 2002, Annual Report, Transportation Canada, Ottawa

Transport Institute, (2000), Economic Impact, Structure & Market Perspectives of the Manitoba Trucking Industry, report prepared for Manitoba Department of Highways & Government Services, Manitoba Trucking Association, prepared by the Transport Institute, University of Manitoba

Westac and Van Horne Institute, (1999), Moving Forward, A Guide on the Importance of Transportation in Canada, Westac and The Van Horne Institute, publishers, Calgary, Alberta

Appendix A: Workshop Questionnaire

Dear Participant:

In advance of your participation in our upcoming FutureLook 2003 workshop, we would ask that you take some time to review and think about the following questions that will form the focus of our discussions.

As stated in our introductory message to you, the goal of this workshop will be to solicit your views on the current issues facing the transportation sector and, more importantly, how transportation will change in the future and how it will respond as our economy moves to a more value-added focus.

Among the more obvious issues of the day would relate to taxation and spending on infrastructure, impact of Kyoto ratification, continental competitiveness, and looming skills shortages. But there are more, and specifically, we want to get your viewpoint on the major issues you are currently contending with and expect to contend with in the coming years.

These questions are meant to be a guide to the discussion and to get the ball rolling but not a limiting element. They are organized into sections to provide structure, but not to indicate priority.

Section A

1. With respect to the current Alberta transportation and logistics environment, what is your understanding of the major issues facing this sector in the following areas?
    a) infrastructure and operations
    b) government regulations and policy
    c) human resources and training
    d) carrier and other services

2. With respect to the current non-Alberta transportation and logistics environment, what is your understanding of the major issues facing this sector in the following areas?
    a) infrastructure and operations
    b) government regulations and policy
    c) human resources and training
    d) carrier and other services

Section B

1. What are your current major product or service lines?
2. What percentage of your business would you associate with each line?
3. What new markets (products) do you see developing in the next 10 years?

4. What would your percentages of business activity look like 10 years from now, factoring in these new markets?
5. Geographically, what percentage of your activity would be within Alberta, Canada, North America, and Global?
6. Given your expectations in 4, what would your geographic percentages look like 10 years from now?

Section C

(Based on your answers in section B)

1. What infrastructure and services will be needed to serve your future business activity needs (ie. In your current and potential markets)

Section D

One of the main economic trends of interest is the shift from a resource/commodity-based focus to a more value-added focus. Growth in agricultural processing, manufacturing, and other value added sectors is occurring. The next series of questions is related to this change.

1. What do you see as being the infrastructure needs associated with the shift to a more value-added economy?
2. Broadly speaking, what is your understanding of how this shift will impact the transportation and logistics sector at large, and your activities specifically?

Appendix B: Interview List

1. AEDA Transportation and Infrastructure Committee

- Gordon Pearce, Pearce Consulting Services (Chair)
- Garth Atkinson, Calgary Airport Authority
- Scott Clements, Edmonton Regional Airports Authority
- Robert B. Colborne, Pacific Western Transportation Ltd.
- Darshan Kailly, Canadian Freightways Limited

2. Alberta Transportation Providers

Air

- Aviation Strategy Action Group
- Calgary Airport Authority
- Cargolux Airlines International S.A.
- Edmonton Airports
- NorTerra/Canadian North
- Purolator Courier Ltd.
- WestJet Airlines Limited
- ZIP Air

Major Distribution and Warehousing Companies

- Canadian Tire Corporation
- Coca-Cola Bottling
- Sears Canada
- Supply Chain Management (Wal-Mart)
- Tibbett & Britten Group
- Westfair Foods Ltd.

Transportation Associations

- Alberta Motor Transport Association
- Alberta Roadbuilders & Heavy Construction Association
- Railway Association of Canada

Ports and Marine

- BCR Marine
- China Ocean Shipping
- Enterprises MACAY Inc.
- Evergreen America Inc.
- NATTAC Commodities Inc.
- Port of Prince Rupert
- Port of Vancouver
- Terminal Systems Inc.

Consultants

- R.P. Erickson & Associates
- SVS Strategic Value Services
- Transportation & Logistics Consulting

Truck and Bus

- Canadian Freightways Limited
- Exalta Transport
- Gibson Trucking
- Pacific Western Transportation Ltd.
- Trimac Corporation

Rail

- Alberta RailNet Inc.
- Athabasca Northern Railway
- Canadian National Railway
- Canadian Pacific Railway
- Mackenzie Northern Railway

Freight Forwarders

- The Cole Group
- Schenker Canada

Agriculture

- Agricore United
- Agrium Inc.
- Canadian Fertilizers
- Louis Dreyfus Canada Limited
- Transfeeder Inc.

Forest

- Alberta Forest Products Association
- Alberta Forest Products Shippers Association
- Alberta Pacific Forest Industries
- Millar Western Forest Products

Other

- Canadian Manufacturers and Exporters Association
- Luscar Ltd.
- Insurance Bureau of Canada
- NOVA Chemicals
- Shell Canada

Training and Educational Institutions

- Centre for Transportation Engineering & Planning, Civil Engineering, University of Calgary
- Chinook College (Logistics)
- Mount Royal College (Supply Chain Management, Bissett School of Business)
- NAIT (Transportation of Dangerous Goods)
- SAIT (Transportation Department)

Institutes

- The Van Horne Institute (Selected membership)
- Western Centre for Economic Research, University of Alberta

Peace Region Conference Call
(Representatives from industry, government and economic development participated)

- Ainsworth Lumber Co. Ltd.
- Alberta Economic Development
- Alberta RailNet Inc.
- Canadian Forest Products Ltd.
- City of Grande Prairie
- County of Grande Prairie No. 1
- County of Saddle Hills
- Daishowa-Marubeni International Ltd.
- Falher Alfalfa
- Falher Seed
- Grande Prairie Chamber of Commerce
- High Level Council
- La Crete Mill
- Manning Diversified Forest Products
- Northern Alberta Development Council
- Weibe Transport Inc.
- Weyerhaeuser Canada Ltd.

Key Provincial Government Departments

- Alberta Agriculture
- Alberta Economic Development
- Alberta Transportation

Cluster Representatives

- Calgary and Edmonton
- Calgary Economic Development
- Economic Development Edmonton

Municipal & County Government

- City of Calgary
- City of Edmonton
- City of Ft. McMurray
- City of Grande Prairie
- City of Lethbridge
- City of Medicine Hat
- City of Red Deer
- Northern Sunrise County

Regional Economic Development Agencies

- Central Alberta Economic Partnership
- Northern Alberta Development Council

Appendix C: Economic Modeling Component

The CD-Rom included with this report contains the detailed economic forecasting component which is introduced and discussed in Chapter 3. The appendix includes a full explanation of the forecasting procedure as well as presentation and discussion of the empirical and statistical analysis.